COMMODORE

AMAZING ISSUE

COMPUTING INTERNATIONAL

DECEMBER 1985

£1
BELGIUM FR1.30 CANADA $3.50
USA $3.25 GERMANY DM 7.5

Winter Games
– Amazing Hot Hits
keep out the cold!

16 Page
Peripherals –
Amazing Guide
Part II . . .

Music Packages
to amaze you

Amazing
Star Gazing –
Fame names
Reign Games
OK?

and . . .

many
mega reviews

Hints and Tips
to get the best from
your amazing 64 and 128

PLUS FREE COMMODORE BUSINESS
MAGAZINE – the latest products
including the amazing AMIGA
and much, much more . . .

COMMODORE
ADD-ON GUIDE
CCI's Complete Guide to all Commodore Peripherals you could use.
COMMODORE
EXCLUSIVE!
COMPUTING INTERNATIONAL BUSINESS MAGAZINE
THE AMAZING AMIGA IS HERE!
We give the first hands-on test to a real production model of the machine acclaimed as the most outstanding and versatile computer of the 80's!!
Plus: The best software and printers for your PC and much, much more

Hundreds of £££'s of prizes:
games, peripherals
business products and
totally amazing CCI readers offers . . .

EXCLUSIVE –
CCI get hands on
a real AMIGA!

There's never been a better reaso

WINTER

You've captured the gold in Summer Games™ and Summer Games II™ – now it's on to the **Winter Games!** And what an incredible setting – a completely realistic winter wonderland featuring six action-packed events. You can compete against your friends or the computer.

First choose the country you want to represent. Then it's practice, training and learning a winning strategy for each event. Now the Opening Ceremony and the competition begins. Will you be the one who takes the gold at the Awards Ceremony?

The quest for the gold continues. . .And it's all here – the strategy, the challenge, the competition, the **art** and **pageantry** of Winter Games!

- **Six Winter Events: Bobsled, Ski Jump, Figure Skating, Free-Style Skating, Hot Dog Aerials and the Biathlon**
- **Opening, Closing and Awards Ceremonies complete with National Anthems**
- **Compete Against the Computer or Your Friends and Family**
- **Unique Joystick Control – Requires Timing and Skill**
- **One to Eight Players**

SUMMER GAMES

SUMMER GAMES II

IMPOSSIBLE MISSION

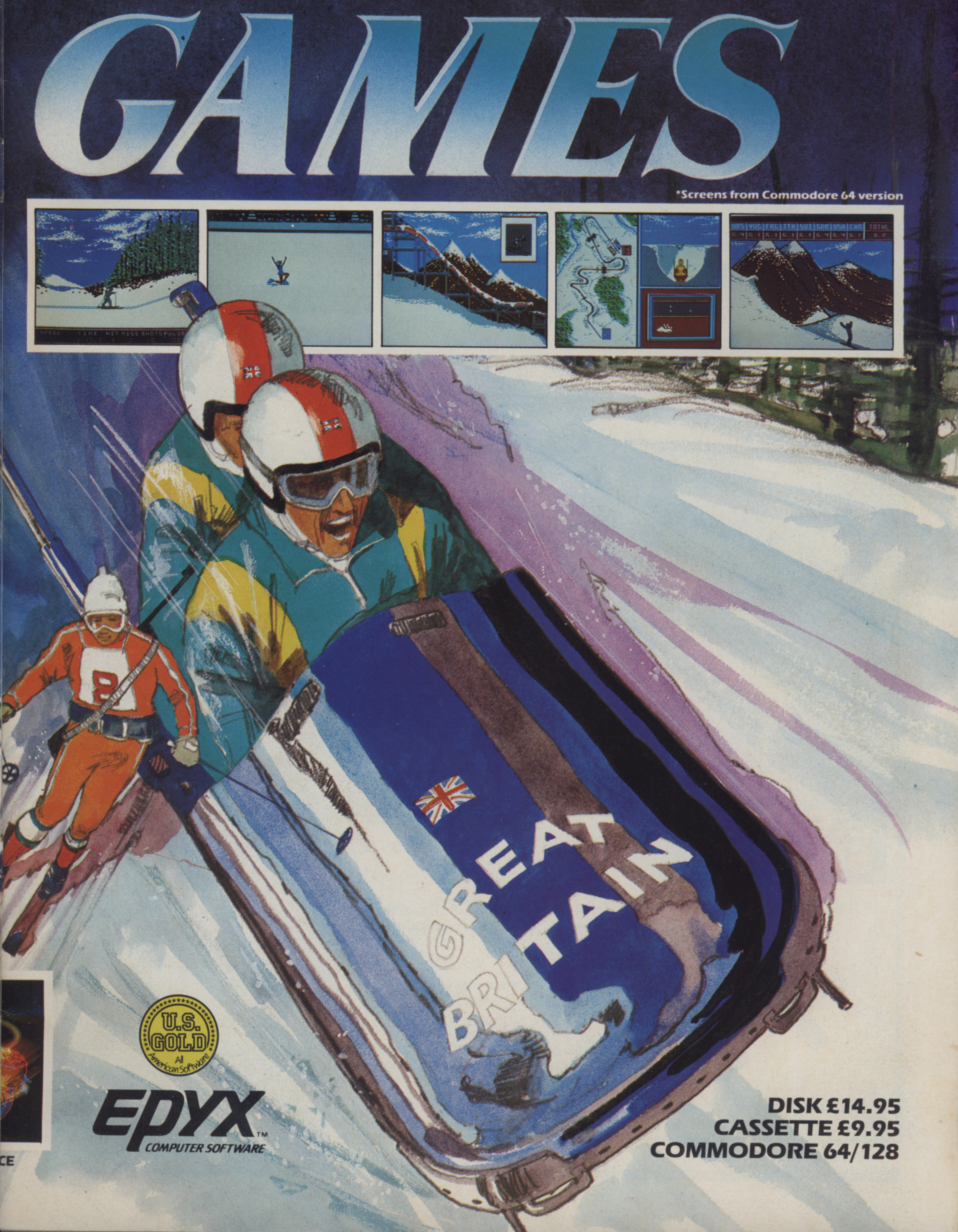
PITSTOP II

BREAKDANCE

son for looking forward to Winter!

GAMES

*Screens from Commodore 64 version


GREAT BRITAIN
U.S. GOLD All American Software
EPYX™ COMPUTER SOFTWARE

DISK £14.95
CASSETTE £9.95
COMMODORE 64/128

**The one magazine every
Commodore owner needs**

Inside

**COMMODORE
COMPUTING
INTERNATIONAL**

**Vol 4 No 5
December 1985**

...NEWS

OVERVIEW 44
Beyond are bought by Telecom . . . 70% of homes will have computers . . . New 128 package announced.

PRODUCT UPDATE 124
Double sided disks for single . . . New triple standard Modem . . . Novel stocking fillers (or so our Ed thinks!).

...FEATURES

128: A BUYERS VIEW 51
Thinking of buying a 128? Here's what you need to know.

DATA LOSS 131
Losing important computer data is an infuriating experience, but it needn't be expensive

Feature of the month

FAME IS THE NAME OF THE GAME 10
It's now trendy to feature a 'name on your game. CCI lets you know who does it, and why.

SPECIAL SUPPLEMENT 77-96
CCI's in-depth pull out peripheral supplement, this month covering Printers, Monitors, Modems, Interfaces, Music add-ons, Speed loaders, Motherboards, Digitizers and much, much, more!

See the Business Magazine for some very special reader's offers

...GAMES SECTION

MEGA REVIEW 61
A Mega-review of a truly Mega-game. US Gold's Winter Games gets a thorough going over; and passes with flying colours!

GAME OF THE MONTH 53
Ariolasoft's newest, Stealth, comes in for our readers criticisms – is it good, bad or ugly?

REVIEWS 62
Exciting, relevant and revealing reviews. See CCI, then decide.

GAMES NEWS 74
All the gossip on the titles that will be coming soon for your computer, and some that won't

CHARTS 97
The Tube may be back on Channel Four, but this is still the place to see what's really going on!

...REVIEWS

DIGIDRUM 57
Turn your 64 into a Simmons drum kit, well nearly!

SOUND BUGGY 58
Back up your music with the Philharmonic orchestra, well almost!

DIGITAL MUSIC SYSTEM 59
A Fairlight CMI for 250, no but a fair attempt!

TANDATA TM110 59
An excellent modem for all you budding hackers, but legal of course!

COMPILER 127
Supersoft's basic compiler

ASSEMBLER/ DISASSEMBLER 129
McGraw Hill's useful utilities for code programming.

GRAPHICS PACKAGE 130
Dorling Kindersley's book and software package to teach you how to program graphics for the 64.

...CONSTANT FACTORS

COMPETITIONS 56
Win lots of the newest and most exciting games in these special CCI competitions.

MUD COLUMN 73
All the up to date news. Has MUD II arrived? No, but our guest scribe should liven things up.

SPECIAL BASIC 99
A purpose for your 64! Print this year's Christmas cards, whoopee!!

BASIC 104
Having created your relative files, now you can back them up with this useful program.

MACHINE CODE 108
Fitting Tinymon in your unexpanded Vic-20

HINTS AND TIPS 116
Readers help you sort out a variety of Input and Output errors and problems.

PET PAGES 121
How to run Pet programs on your Commodore 64 (shome mishtake shurly. FKJ)

...BUSINESS

CCI's 36-page supplement, The Commodore Business Magazine, concentrates on all things PC and Amiga. An exclusive review of the Amiga; reviews of PC compatible, near-letter-quality printers; the top 10 business packages; an optical mouse for the PC; and more 1-36

ADVERTISING GUIDE

Adamsoft	73
Airborne Software	65
Alligata	IBC
Ariolasoft	55, 71
Atlantis Software	65
Calco Software	123, 128
Cascade Games	103
Cheetah Marketing	93
Chromasonic	93
Commodore	85
Dimension	73
Dosoft Ltd	88
Electronic Aides	122
Evesham Micros	128
FCC Systems	95
Graphsales Ltd	49
Handic Software	118, 119
Home & Personal Computers	111
Level Ltd	122
Meedmore Distribution	83
Micro De Bug Consultancy	123
Micropride	96
Micropro International	125
Microsound Ltd	65
Modem House	80
Mr Software	101
Orpheus	45
Philips	78
Programming Associates	60
Radofin	42, 43
Selec Software	73
SJB Disks	107
64 Software Centre	109, 115
64 Supplies Co	67
Screens Microcomputers	95
SMC	95
Supersoft	OBC
Syndromics Ltd	88
Tandata Marketing	86, 87
Trilogic	123
Trojan Products	60
US Gold	IF Spread, 63
Viza Software	69
Zero Electronics	93

AS A COMMODO
APPRECIATE THE S

Since the dawn of the computer age the prices of home computers have been steadily falling.

But, remarkably, the price of a genuine, full-blooded disk drive has remained almost constant.

Constantly expensive.

You'll be lucky to pick up a decent one for less than £200 in the shops.

Now, however, you can have one delivered to your doorstep for only £119.95 (including VAT and postage and packing).

The new Triton Quick Disk from Radofin.

Its specifications are every bit the equal of a £200 disk drive, as a glance at our card above will confirm.

Quick Disk uses the very latest technology to store up to 100K on high quality Hitachi Maxell double-sided 2.8" disks.

Its disk operating system (DOS) uses standard commands so it is truly easy to use, as any computer novice will be glad to hear.

While the price will be compatible with most wallets, there is a Triton Quick Disk compatible with most computers – Commodore 64, Spectrum (16K, 48K and Spectrum plus), Aquarius, Dragon 64 and all MSX Systems.

And, naturally, included is an interface box plus all connecting cables and instructions.

In short, what we deliver is a complete, genuine disk drive. Not a tape or wafer in sight. All for only £119.95.

And when it comes to speed of loading, the Triton Quick Disk more than lives up to its name.

FROM 0 TO READY IN 7 SECONDS.

To put the Triton Quick Drive through its paces we used an ordinary computer game – Jet Set Willy.

From tape it took 170 seconds to load.

When loaded from the Triton Quick Disk it took a mere seven seconds. That is 163 seconds less than the tape and certainly as quick as most disk drives on the market.

AS A WALLET
APPRECIATE

ORE USER YOU'LL
E SPECIFICATIONS.

TRITON
FLOPPY DISC DRIVE
QD
POWER
TRITON QUICK DISK
Data Transmit Rate: 100K Bit/Sec.
File Load Rate: Min 2 sec-Max 8 sec.
Media: Hitachi Maxell 2.8" Double-Sided Diskettes.
Memory: 100k Bytes Formatted 20 Sectors/ Side 2.5k Bytes/Sector.

Proof indeed that the Triton has all the capabilities of its more expensive rivals.

AS TEST DRIVEN BY THE EXPERTS.

New it may be, but the Triton Quick Disk is already receiving rave reviews in the computer press. For example, in a recent Home Computing Weekly article it picked up their much coveted "Flipped" award.

As their journalist said ".... I am very impressed by the Quick Disk. Not only is it very quick, and both smaller and neater than other drives, but it's easier to use as well...the Quick Drive performed faultlessly.

It's easy to use and at around £120 is probably the best buy for the first time user."

High praise indeed for any disk drive.

For one costing £80 less than any comparable piece of equipment it's exceptional.

HOW TO BUY YOUR TRITON QUICK DISK.

As yet you won't find the Triton Disk Drive in any shop. You can only lay your hands on one by filling in the coupon below.

Send it, along with a cheque or P/O for £119.95 to, Radofin Electronics (UK) Ltd., Hyde House, The Hyde, London NW9 6LG. (Postage free in the UK. Add additional postage for outside the UK.)

In the unlikely event of you being in any way dissatisfied, simply return the disk drive and we'll happily return your money.

T USER YOU'LL
E THE PRICE.

TRITON
FLOPPY DISC DRIVE
QD
POWER
TRITON QUICK DISK
£119.95

TRITON
QUICK DISK.

Please send me a Triton Quick Disk for £119.95.

My computer is a________________

____

Please include________ 2.8" Diskettes at £2.99 each.

I enclose a cheque/postal order for

Total____________________

Make cheques payable to:–
Radofin Electronics (UK) Ltd.,
and post to us at Hyde House, The Hyde,
London NW9 6LG. Tel: 01-205 0044.

Name____________________

Address__________________

____

____

CCI/12.

Tel No.__________________

Please allow 28 days for delivery.

...news ...news

CCI goes for Gold

CCI are now on both Telecom Gold and One to One, so if anyone out there has any queries; technical or non-technical, our Staff Writer, Francis Jago, will check up regularly and should be able to help you with any information you need. When we get our Amiga we will also be sending updates to anyone who asks for one.

We can be contacted on Telecom Gold on: 83:JNL127, and on One to One on: 12468002. So come on, get calling all you out there. Any news or gossip would be especially welcome!

Online Aid get ready to give

It is an undeniable fact that the computer industry is still one of the richest, despite the falling profits of companies such as Commodore. To make the most of this wealth a group of trade figures have set up a target of 1,000,000 to help the famine victims.

The first Online project will be an advertisement, in Christmas editions of the national press, which it is hoped will raise 250,000. If you wish to find out more details, or donate some money please contact either of the following people: Claire Gooding – 01-642 7945 or Paul Walton – 01-515 2739.

70% of homes will have home computers

According to a recent report by Mintel, the 2.6 billion leisure industry is set for substantial, if uneven, growth. By 1989 70% of all homes will have a home computer. This compares with an estimated figure of 23% for 1984.

The report goes on to say that the 1984 figure of 250 million pounds worth of computer sales will fall to about 60% to £100 million by 1989, "but a characteristic of the market is that it is becoming software led."

Basically the report says what everyone expected – that the software houses would become much more of a power and, in my view, people will soon buy computers having examined their software base, as opposed to vice-versa.

Opinion...

Dear Reader

This December issue of CCI covering the whole range of Commodore interests – Business, peripherals, games and much more – is the largest we have published; an indirect but significant sign that the boom in computers is far from over. There are, in fact, developments such as Commodore's new Amiga, which will certainly bring into the world of computers greater interest and excitement than ever. Computing – with low cost, powerful machines such as the Amiga, the words 'home' and 'business' are likely to become indistinguishable – may well be moving towards to the dawn of an extraordinary new era.

As our reviewer points out, in CCI's exclusive report on a 'real' Amiga, ie not a hyped-up pre-production but a genuine consumer market model, it is a machine that does not follow, but sets standards.

It seems designed to lead the way into the age of the super-chip; the super computer which will be within everyone's reach. And it is extremely heartening that it should be Commodore who have made the first step in that exciting direction.

Another encouraging aspect of the Amiga is that it includes, among its operating systems, PC compatibility – although it has been scathingly commented that it was necessary to slow down the Amiga to run the MS/DOS software. This common sense move to operating compatibility follows Commodore's recent precedent with the new 128 running all the 64 software.

In the past, Commodore has been criticised for bringing out individual, non-compatible machines like the C16 and the Plus/4 and leaving them with a relatively limited software list.

Almost alone, CCI has consistently covered the interest of these machines both for the benefit of their owners but also to encourage the software industry to support them. As the C16 and Plus/4 are both still in the shops, it is important that Commodore's new and outstanding products do not claim everyone's attention to the cost of the users of the other, older Commodore machines.

A company, such as Commodore, which has a reputation to maintain and a market to hold must ensure that loyal owners are kept fully supplied with useful and interesting software. So when the time comes to upgrade to another computer they are not reluctant to buy Commodore again.

We are sure that Commodore realises that it is in its own interests, as well as those of its users, to keep this in mind. Especially as its exciting new computers begin to make their mark in today's highly competitive market.

Antony H Jacobson,
Publisher.

Editor .... Susan Pearce
Staff Writer .... Francis Jago

Subscriptions/Production Executive .... Sharon Gilkes

Illustration .... MJG and GB

Advertisement Manager .... Peter Chandler

Publisher .... Antony Jacobson

Cover Design Graham Baldock

Cover pics .... courtesy of US Gold. Illustration by MJG.

Typesetting .... BWS Graphics

Telephone 01-278 0333
Editorial ext 274
Advertising ext 280
ext 286
Subscriptions ext 274

Contributors:
Bill Donald
Ian Waugh
Jason Johnson
Rae West
Bob Davis
David Brooks
Julian Rosen
Tony Lydeard
Mike Hart

Published by Croftward Limited
Finsbury Business Centre
40 Bowling Green Lane
London EC1R 0NE

Distribution by Comag, Tavistock Road, West Drayton, Middx UB7 7QE.

Printed by Chase Printers Group, London and St Austell

ISSN 0276-596X

Commodore Computing International - an independent magazine for Commodore computer users - is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1985

Software for your Commodore 64 *from Orpheus*

PASCAL 64

Orpheus Pascal 64 is based on standard Pascal with numerous extensions for graphics sound and hardware control. A comprehensive 128 page ring bound manual is supplied with the package which explains with examples, the working of each command. As Orpheus Pascal 64 is expected to be popular with educational and domestic users Orpheus will be providing a free technical update service to customers when they send back their user registration forms.

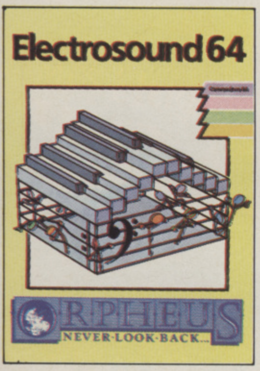
£24.95

MEGABASE

Records are created efficiently in memory, and date files can be easily saved onto disc and tape (a quick loader/saver is provided). You can define up to 26 fields, which give you meaningful names for later reference. The fields in each record can be either numeric or strings of characters. You do not need to specify limits to the length of the fields.

Megabase provides an instant sorting mechanism, resequencing your file according to any number of fields, in ascending or descending order. Your records stay in order even after records have been added, deleted or changed.

£24.95



ELECTROSOUND 64

The complete electronic music package for the novice and the professional musician.

Use Electrosound 64 to create incredible music and sound effects. Play the keyboard manually with three note polyphony or build up complete sequences and tracks. Electrosound allows you to design your own sounds with full control of waveform, envelope, filtering, triggering and sweep.

£14.95

CAD 64
ORPHEUS
NEVER·LOOK·BACK...

CAD 64

Computer Aided Design on your Commodore 64. Design 3D objects on the screen, rotate them, expand them, amend them and print them out.

Use CAD 64 at home or at school for technical drawing, graphics design or simply for fun.

£14.95

Orpheus Ltd., The Smithy, Unit 1, Church Farm,
Hatley St. George, Nr. Sandy, Beds. SG19 3HP
Tel. Gamlingay (0767) 51481/91 Telex 817117 ETHGEN G

ORPHEUS
NEVER·LOOK·BACK...

Please send me
______ copies of PASCAL @ £24.95
______ copies of MEGABASE @ £24.95
______ copies of ELECTROSOUND @ £14.95
______ copies of CAD 64 @ £14.95

P&P FREE (UK only); £2.00 P&P overseas.

Name: ______________________
Address: ______________________

Please make cheques or money orders payable to Orpheus Ltd and send together with your order form to:
Orpheus Ltd, The Smithy, Unit 1, Church Farm,
Hatley St. George, Nr. Sandy, Beds. SG19 3HP.

In the home market, games are still the largest selling software product. With the market being so competitive, software houses are desperately searching for something that will make their game stand out. A few years ago, it was enough to produce an excellent game; reviews and word of mouth would do the rest for you. Now however there must be a free poster, a club membership or, perhaps most commonly a famous name to sell it on.

Ocean's Daley Thompson's Decathalon was one of the pioneers of this idea. When it became apparent that this game was going to profit greatly from a famous sports personality's name, the major software companies ran wild, trying to secure the support of everybody famous (and some not so famous!).

The list of the names is almost endless, ranging from cartoon characters such as Spiderman, to pop groups like Frankie Goes to Hollywood.

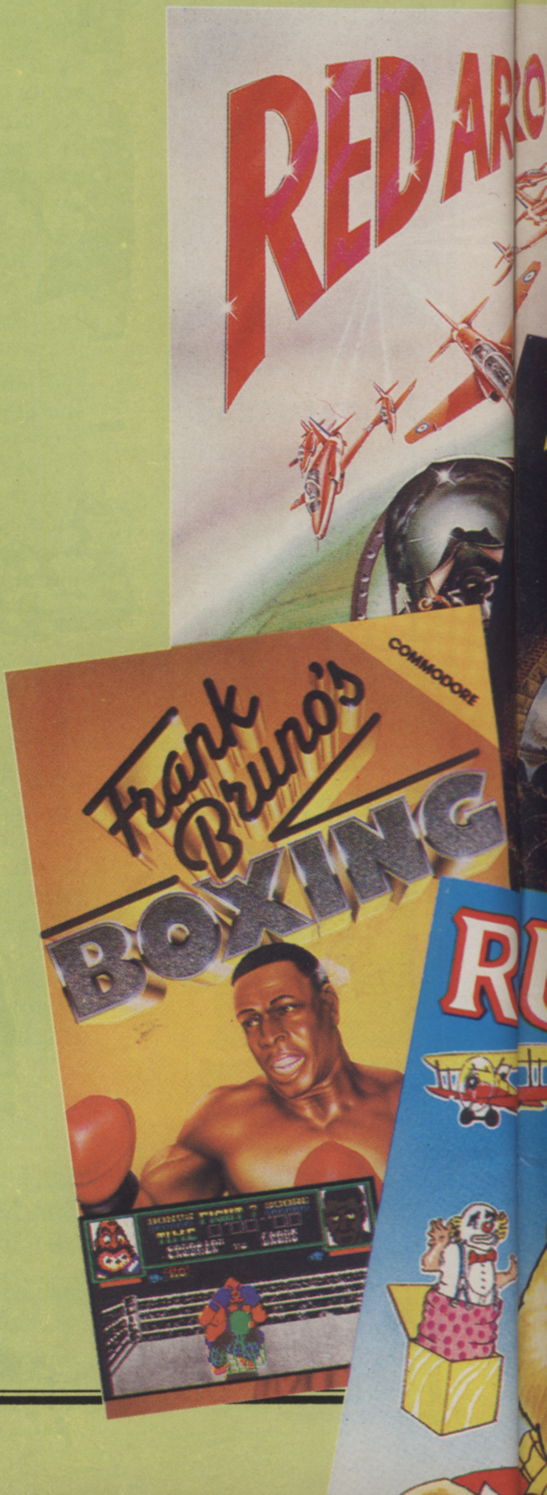
This feature is designed to indicate the vast selection of these games – some good, some average. It has got to the stage where companies are scared to release a title, however good, unless it has a name to accompany it. A perfect example of this is in the early simulations; Summer Games was by far the best game, but Daley Thompson's Decathalon sold many more copies. The question arises, would Summer Games have sold more if it had been Steve Ovett's Summer Games?

Many of the larger companies, Ocean, US Gold, Beyond, Elite, Argus, Virgin, Orpheus etc, release excellent programs and add to them by using a personality to help the launch. You can be pretty sure, however, that these games are not going to be of poor quality (although there are exceptions). The smaller companies, however, tend to think that they can realease anything they want, and it will sell purely on the name. This must not continue; if it does, the value of the games market will decrease drastically, and many of the smaller and more lively software houses (who cannot afford 50,000 for the rights to a Lucas film title) will dissappear, and that will be bad for the whole games market.

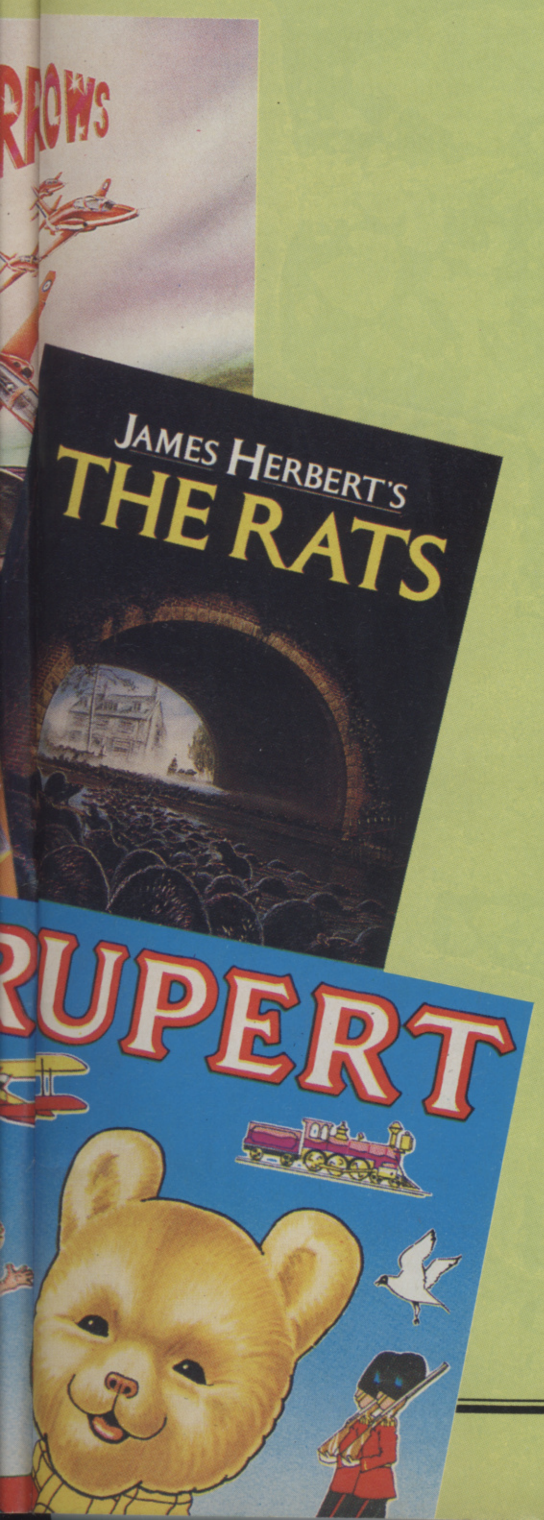
FKJ.

This list is designed to show you some of the huge variety of 'Famous Name' games due for release within the next few months. As you can see, the list not only has names, but films, cartoons and cult television programs. This list is by no means complete, as news of more games lands on my desk literally every day.

The Flintstones: Argus Press Software
The Young Ones: Orpheus Software
Friday the 13th: Domark
Superman: Beyond Software
The Goonies: US Gold
Zorro: US Gold
Dr Who and the Mines of Terror: Micropower
Rambo: Ocean
The Never Ending Story: Ocean
V: Ocean
Krypton Factor: Ocean
Knight Rider: Ocean
Daley Thompsons Supertests: Ocean
Geoff Capes Strongman: Martech
Scooby Doo: Elite
Wacky Racers: Elite
Harvey Smith's Jump Challenge: Software Projects
Dan Dare: Virgin



... is the name of the GAME



RED ARROWS

The Red Arrows have always held a soft spot in my heart, from the first time I gazed at them zooming along, missing each other by mere inches, risking life and limb all for the public's enjoyment!

Who out there never wanted to fly with the Red Arrows? Eh? I for one very nearly wrote to Jim 'll Fixit, but was beaten to it by some git from Scotland, damn!

Database Publications have now released a simulation that claims to be the answer to all these dreams, but is it?

The first options menu is to decide what you would like to perform whether you want to practice – essential for beginners – or into one of the enormously complicated manoeuvres such as 'Concorde' or 'Manhatten'.

If you have ever watched the Red Arrows you can imagine how difficult doing a 270 degree bend in 'Big Nine' changing into 'Diamond Nine' and, intentionally or not, this is true in the computer game!!

Graphically Red Arrows is a little too chunky for my liking, with much of the movement being jerky rather than smooth, although the loading screen was very nice.

What little sound there was added very little to the game, as it only consisted of white noise for flight, and a crash sound for collisions.

If you are a fan of flight simulations, and are looking for something that will really test your formation technique, or perhaps you are just looking for a more controllable plane (actually intended to be a Hawk T. J, 1), this is the game for you.

Finally, if you do get good at the game, you can enter the competition to win a day out with the Red Arrows boys, so maybe this is my chance – only 10 years late!!

Fast Loader: Yes
Graphics: ***
Sound: **
Playability: ***
CCI Rating: ***
Price: £7.95 cassette.
Contact: Database Software, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY. Tel: 061-456 8383.

FRANK BRUNO BOXING

I'm quite sure that Elite watched in interest as Frank Bruno massacred erstwhile European champion Anders Eklund. Having – in their press release – described Mr Bruno as "One of the worlds greatest ever boxers", it would have shattered many illusions had he been defeated by the world's number 12.

Having loaded you are greeted with a snappy little version of the theme from Rocky, and each fighter who you confront has his own tune.

The graphics of the game are very nice, and with a little bit of imagination you can even recognise Mr Bruno himself! To make the most of the game you really need two joysticks, one for movement and another for the actual punches.

The first boxer you must confront is 'Canadian Crusher', a huge lump of meat who is slow and cumbersome, but when he hits you sure know about it!! To move on to the next boxer you must knock each boxer down three times in one three minute round, you are then issued a code number which will allow you to load the next boxer from the tape.

To win the world championship, you must defeat eight fighters in total, each of whom has their own special trick to try and knock you out, 'Fling Long Chop' tries to kick you in the head; 'Andra Puncheredov' gives out a savage head butt, and 'Frenchie' really winds up his punches!!!

Having defeated the first seven contestants, including the almost impossible 'Antipodean Andy', you are put up against the World Champion 'Peter Perfect', who is so unconcerned by your efforts that he spends a great deal of time blowing kisses to the crowd! If you ever defeat him a nice front cover from a paper called 'The Stun' is displayed showing you as a World Champion.

Both the graphics and sound of Frank Bruno's Boxing are excellent, the crowd is lovely, and the knock out meters and facial close ups are excellent.

Graphics: ****
Sound: ****
Playability: ****
CCI Rating: ****
Price: £8.95.
Contact: Elite Systems Ltd, Anchor House, Anchor Road, Wallsall, West Midlands. Tel: 0922 5552.

THE RATS

Never having been a mad fan of books which involve a great deal of flowery prose about rotting and mutilated corpses I saw little to attract me to Hodder & Stoughton's newest game, based on James Herbert's novel.

However the game is surprisingly good. It involves playing certain characters from the book, and overuling the defence of London. You must survive individual attacks from the rats by using icon-driven options, such as where to run or whether to throw an ashtray at a giant rat (don't bother it's useless!).

The main bulk of the game is spent allocating forces to stop the rats from spreading, and gathering reports on where they have been sighted. Graphically you are shown a nice map of London which shows sightings and confirmed reports, in white and red respectively.

Depending on how much of your resources you have allocated to what — research, offence, defence or origin — you are given regular updates which ammount to vital clues in how to eventually defeat the Rats.

Overall the game is good, though after a while I can see it becoming a little repetitive. Some graphic touches, such as screaming faces and splattered blood are excellent. **If you like games which are annoying and last a while then it's for you.**

Fast Loader: Not very!
Graphics: ***
Sound: ***
Playability: ***
CCI Rating: ***
Price: £7.95

Contact: Hodder and Stoughton Software, Mill Road, Dunton Green, Sevenoaks, Kent. Tel: 0732 450111.

THE SECRET DIARY OF ADRIAN MOLE

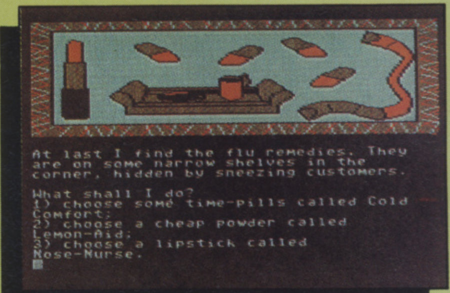
"Dead brilliant!" is Adrian Mole's verdict of the game in which he stars. Well I'm sorry Aidie, but I must confess to being a little disappointed.

The Adrian Mole books have been successfully converted into a television series and a stage production, and it was with great anticipation that I awaited the computer version. The approach Mosaic has taken is a kind of computerised book with you in the role of Mole determining the outcome of events.

Covering one year in Mole's life, the cassette loads in four sections – spring, summer, autumn and winter. As the days progress, you find yourself in various situations where you have to decided between three options. The aim is to make yourself 100% popular, or even unpopular if you choose. Had there been the facility to type in your own suggestions I would have felt more involved.

As the text unveils the story in the lower half of the screen, so a limited selection of vaguely related graphics fill the top half of the screen.

I can't quite decided whether this game will appeal most to those already familiar with the inimitable Mole humour, or those to whom this will the first introduction to Mole.



```
At last I find the flu remedies. They
are on some narrow shelves in the
corner, hidden by sneezing customers.

What shall I do?
1) choose some time-pills called Cold
Comfort;
2) choose a cheap powder called
Lemon-Aid;
3) choose a lipstick called
Nose-Nurse.
```

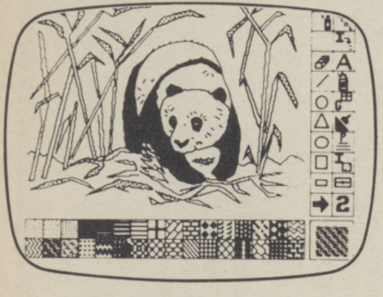
I know of very few people who aren't amused by Mole's schoolboy antics and worries and this game certainly gives you the opportunity to become well acquainted with this humour.

Graphics: **
Sound: n/a
Playability: ***
CCI Rating: ***
Price: £9.95 (cassette), £12.95 (disk).
Company: Mosaic Publishing, 187 Upper Street, London N1. Tel: 01-226 0828.

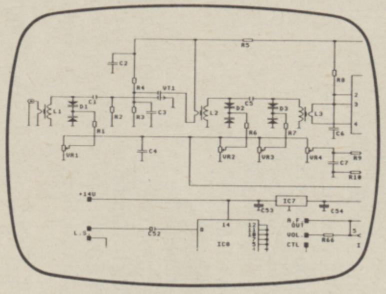
RODENT CORNER
THE RAT

Continued on p53

HIGH-RES GRAPHICS AT LOW-RES PRICE

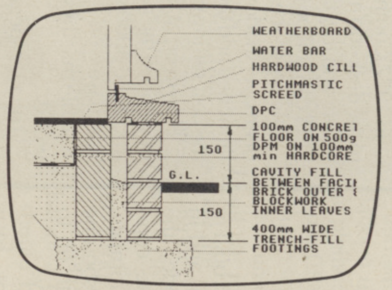


FREE-HAND DRAWING ICON SOFTWARE



ELECTRONIC CIRCUIT DESIGN WITH CIRKWIK

USING GRAFPAD FOR TRACING



WEATHERBOARD
WATER BAR
HARDWOOD CILL
PITCHMASTIC SCREED
DPC
100mm CONCRET FLOOR ON 500g DPM ON 100mm min HARDCORE
CAVITY FILL BETWEEN FACI BRICK OUTER BLOCKWORK INNER LEAVES
400mm WIDE TRENCH-FILL FOOTINGS
150
G.L.
150

ARCHITECTURAL DESIGN WITH DDX SOFTWARE

GRAFPAD II–

THE ULTIMATE IN GRAPHIC INPUT DEVICES

FOR THE BBC, COMMODORE AND AMSTRAD MICROS

The first low-cost graphic tablet to offer the performance and durability required for business, industrial, home and educational applications. It's small, accurate and reliable. Needs no adjustment or preventive maintenance. **GRAFPAD II** is a unique product that brings the power of modern technology under the control of the user.

GRAFPAD II:

- A brilliant British invention manufactured in Gt. Britain, unequalled in the world of graphics input.
- Ferranti's space age technology makes the Grafpad II unique in its digitising technique.
- The culmination of 3 years of advanced research to create a final graphical solution for the world computer market.

IT COMBINES IN ONE DEVICE ALL THE FACILITIES OF PREVIOUS ATTEMPTS AT INPUT DEVICES. THE APPLICATIONS ARE AS NUMEROUS AS THAT OTHER COMMONLY HELD DEVICE – A PEN! – AND INCLUDE:

● Option Selection ● Form Input ● Data Collection ● Logic Design ● Circuit Design ● Picture creation ● Picture storage ● Picture retrieval ● Construction design ● C.A.D. ● Text Illustration ● Games ● Pattern Design ● Education ● PCB Design

- **A4 SIZE DRAWING AREA**
- **HIGH RESOLUTION COLOUR**
- **HOME AND BUSINESS USE**
- **VARIETY OF OPTIONAL PROGRAMMES**
- **FREE HAND DRAWING**
- **CIRCUIT DIAGRAMS**

- **C.A.D.**
- **PCB LAYOUTS**
- **EASY TO USE**

FREE ICON DRAWING SOFTWARE WITH EACH GRAFPAD II

£59.50 inc. VAT

Available from most Computer dealers or direct from Grafsales Ltd.

SPECIFICATION

Resolution:
1280 x 1024 pixels

Repeatability:
1 pixel

Output rate:
2000 co-ordinate pairs per sec.

Interface:
parallel

Origin:
LH corner or selectable

Dimensions:
350 x 260 x 12 mms.

EXPORT AND DEALER ENQUIRIES WELCOMED

TO: GRAFSALES LTD.

Unit 8, Derby Works, Carey Place, Watford,
Herts, WD1 2LR. Tel: (0923)48222

Please supply ____ GRAFPAD(S) II for * ________ MICRO at £59.50 plus £2.50 p&p

*Please indicate for which machine.

NAME: ________________

ADDRESS: ________________

Cheque enclosed value £ ________

You can pay by credit card or telephone your order

Visa			
Access			

CC1/1

...news ...news

Beyond bought by Telecom

Beyond, EMAP's games software house, has been bought lock, stock and Superman, by British Telecom. In a deal suggested to be worth nearly one million pounds to EMAP, the agreement was signed last week.

Beyond will, however, remain totally separate from BT's other software arm, Firebird. All of Beyond's current titles will go to BT, as will the new titles planned for Christmas, although both companies state that as little as possible will be changed in the run up to Christmas time.

Christmas Compendium for C64

Commodore have also announced a new promotion designed to appeal to first time buyers of the 64 for Christmas. Priced at £199 it will include a 64, a 1530 Datacassette, Music Maker, Designers pencil from Activision, The Secret Diary of Adrian Mole game, and a copy of the book 'The Growing Pains of Adrian Mole'.

As well as this there will be a peripherals pack, comprising a 1541 disk drive and dot matrix printer for £199.99. Commodore describe this as "effectively two for the price of one".

128 comes packaged with fast disk

Commodore have now announced that the 128 will be offered complete with a 1570 disk drive for £449.99, as of November.

The 1570 is a single-sided 0.5 Megabyte 5.25 inch floppy disk drive designed specifically for the 128, although it will work with other Commodore home computers.

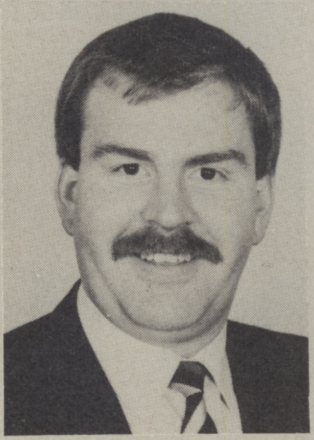
The drive comes with built in 2K RAM and 32K Rom, and in CP/M Compatible mode, the 1570 is fully read/write compatible with numerous formats, including Kaypro, Osbourne and IBM CP/M 86, with up to 410K formatted capacity.

Only one weekly left

Never again will you see a copy of Argus' Home Computing Weekly on the shelves. In a move to consolidate their position, Sunshine Publications have merged HCW with their own weekly, Popular Computing Weekly.

This means that the last 18 months has seen the demise of two weekly's – the excellent Personal Computer News being the other.

Commodore Comments...



This month's Commodore Comment comes to you from Mark Plant, National Sales Manager for Business Systems.

The opinions published here are those of Commodore, and do not necessarily concur with the views of CCI.

"Well, here we are again! The pleasure of talking to you this month falls to me. Of course I have a slightly different perspective from the previous column writers because I am the business systems sales manager.

It often escapes many people that Commodore are not only the number one home computer company, but also have the largest user base of business micros. As I say, this does surprise many people but it shouldn't.

In 1977 Commodore launched the first PET which gave birth to the desk-top micro-computer. Because of its computing power and low cost the PET was an instant success and many PETs can still be found in business and particularly in education.

Our presence as a manufacturer of business micros may have been overshadowed by the fact that in 1980 the VIC20 was launched and then followed up by the C64 which has become the best selling micro computer in the world.

However, at the same time as the VIC 20, Commodore had developed the next generation of PETs. This family evolved the 4000 and 8000 series which maintained our massive business user base world-wide. The 8000 series has proved so robust and reliable that they still are in very heavy usage throughout the world.

Today, especially in the UK, Commodore have almost become a victim of our own stunning success. We are so successful in the home computer market that again there is the danger of it overshadowing our success in the PC market.

We have a super PC product which is going really well through our nationwide network of Commodore Business Centres. There is no reason why we at Commodore cannot enjoy success in all elements of the industry; home, business, education and training. We are some way along that path today and with super products like the 128 and Amiga we have all the ammunition for both sides of our business.

I am pleased to have had the opportunity of talking to you. Please remember that wherever you see a computer, more and more you will see Commodore."

Mark Plant
National Sales Manager
for Business Systems

A Buyer's View of the C 128

Bill Donald provides a personal view of the 128: what does it do and where does it fit in the market?

The 128 adopts an unusual approach to the home computer market. On one hand it exhibits a chameleon-like ability in terms of operational modes, on the other hand it remains tied to old technology in the shape of 8-bit processors. These individual modes are the pivot of the machines success, but are they as significant as Commodore would have us believe?

The 64 mode allows the 128 to run *any* 64 software past, present or future. This has the benefit for existing owners of the 64 to avoid reinvesting in a new and expensive library of disks or tapes. For the prospective buyer, a huge variety of software is available *now* and with the help of reviews and adverts in magazines, selection of exact requirements will present very few problems. Also, there is a voluminous resurgence of new 64 software in the USA this last quarter which should make itself felt here very soon. For Commodore themselves this mode enables them to expose the 128 being ready-to-run, a major factor since a computer without software is purely a very expensive piece of plasto-silicon.

The drawbacks of the 64 mode are well documented. Screen displays of 40 columns are no longer de rigeur at this level and the truly awful speed of 1541 disk drive is embarassing. An examination of the 1541 ROM reveals that it spends 95% of its operating time trying to convince itself it is not drive 1, the cause of the snail-like loading/saving cycles. Current generations of applications software such as Superscript and Visastar merely reinforce hardware limitations, which Superbase exposed two years ago in terms of memory size and 1 MHz clock speeds. For games players, 64 is arguably of a better standard than the Spectrum, BBC and the rest, so for them loading only occurs once and to a large extent the screen column size is unimportant.

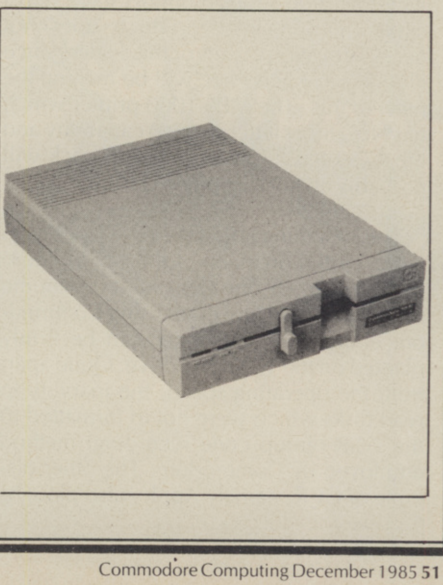
"Two drives are necessary for CP/M to be truly effective"

The CP/M mode could be construed to be a red-herring as far as UK buyers are concerned. It is true that a great deal of software is available in the public domain libraries. Application software from this source is essentially sourced from the USA where business and commercial practices are considerably different from those in the UK. So do not expect to pick up a package for the price of a disk that will run your company accounts or whatever – at least not without extensive modifications of the software or your business. Similarly, general purpose ready to run software for CP/M is pitched at a level that will make the average serious home user baulk, and it remains to be seen if any software house will write specifically for the 128 running CP/M. CP/M public domain software represents mainly a platform upon which to access and learn the plethora of programming languages. To run CP/M software in its full glory an 80 column screen display is virtually mandatory and unless you own a monitor that will pull this resolution, and that does not include the 1701 monitor, then this represents further capital outlay. Admittedly the bulk of CP/M software does not support colour, so a monochrome monitor will cost £80-£100. The purchase of a monitor should be approached in the same manner as that of a printer. These items of hardware should be capable of being carried forward to your next machine.

For CP/M to be truly effective two drives are necessary, ideally dual drives. The next best is a single drive with a RAM disk facility on the machine, failing this then two single drives. The 128 as it stands cannot support a RAM disk and at the time of writing the whole disk drive situation at Commodore is perplexing, more of which later.

When the 128 is running in native mode, ie as a 128k, 6502-based, 80 column display with BASIC 7.0 it is necessary to purchase a disk drive and a medium resolution colour monitor to exploit the full potential of the machine and software. The 1541 drive will run with the 128 although it remains to be seen if commercial software is made available in the 1541 format. I would imagine that they will include two disks, one for the 1541 and one for the 157x-series drives, naturally you and I will be bearing the additional cost of this.

The 128k of RAM offered by the 128 is made possible by bank-switching since an 8-bit processor can only address a maximum of 64K at any given time. The mechanics of the bank-switching are executed independently by the machine or it can be done under program control and it operates by paging 32k blocks into the 64k processor address space. The same technique was experimented with on the 64 and perfected on the Plus/4 by Commodore hardware engineers. The 64 can bank-switch into memory a single 32k block whereas the Plus/4 can switch in three 32k banks, one internal and the other two external to the machine. I have always said the Plus/4 is a much underated machine and I am glad to see that Mike Todd, the new ICPUG chairman shares my view. The number of banks on the Plus/4 is a function of the limitations of the address bus buffering. The 128 design is such that the machine is capable of an address bus load of 512k.

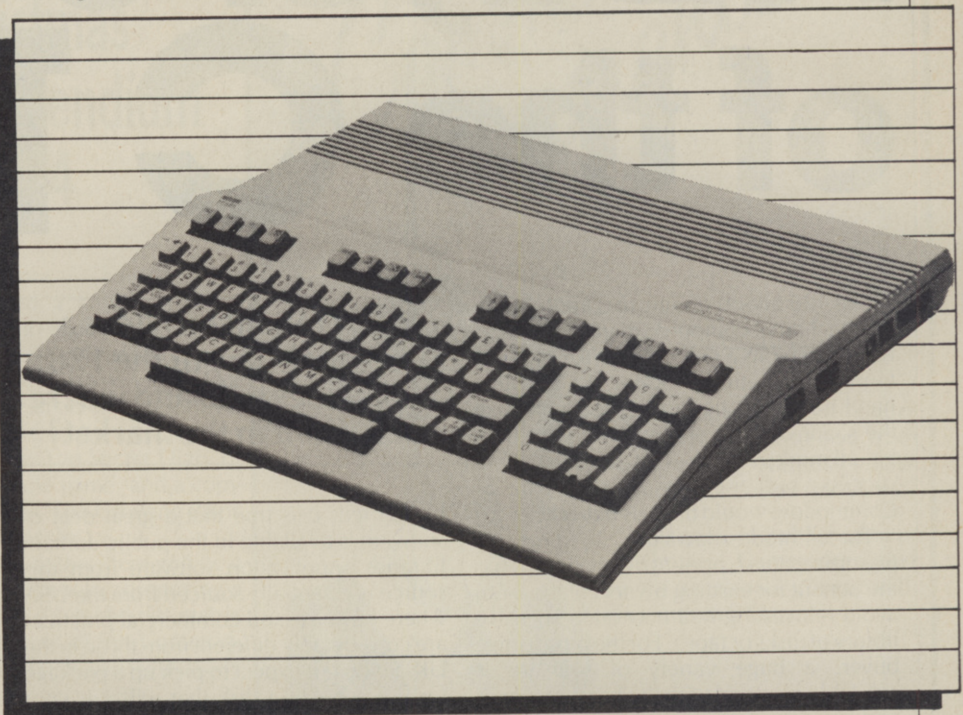


"BASIC 7.0 – an ambiguous version number?"

The BASIC 7.0 of the 128 seems to have an ambiguous version number, since it is not in my opinion twice as good as BASIC 3.5 or BASIC 4.0, indeed BASIC 5.0 would have been more numerically accurate. Amongst other things the much-vaunted PROCedures facility of the BBC or SUPER-BASIC of the QL are missing. I really do not understand why at this level of computing we have to tolerate the manufacturer's 'Henry Ford' approach of any resident language you like as long as it is BASIC. Commercial software is rarely written in BASIC, the language has been corrupted into specific machine dialects, the language itself encourages prematurely, a sloppy style of approach since it is largely unstructured. What is wrong with PASCAL, the language taught and used at the professional level. Even COMAL, the half-way house between BASIC and PASCAL has been adopted by the Scottish educational authorities en masse in perference to teaching BASIC in schools. COMAL has been implemented on the IBM PC and BBC, so no worries about machine transitions. Presumably fears about the resulting outcome of the Jupiter Ace which used FORTH as the resident language gives rise to the manufacturers resistance to change, although without doubt in that example there were two reasons for the demise of the Ace. The first being the language itself – FORTH is recognised as being difficult to learn – secondly the market was still in its infancy and was simply not ready.

The peripherals necessary to get the most out of the 128 are all in the pipeline, they were not available at the launch time. The 1571 dual disk drive is still not available and the only drive that appears to be officially available is the 1570 single drive with a meagre 170k capacity. Similarly the 1900 series monitors have yet to make an appearance, which does not necessarily worry users or the dealers since Philips and Microvitec will be making the most of this. The MPS 1000 printer which has NLQ (near letter quality) capability and the 1750 512k RAM expansion pack will probably not hit Europe until 1986.

The best thing about the new disk drives is the partial breaking of the Commodore DOS mould. If one item inhibited home users more than any other using Commodore equipment, the finger can be firmly planted on the 1541 disk drive. Quite apart from the operating speed, the inability to read disks which were not to formatted to the GCR (group code recording) method employed by Commodore. The other disciple of GCR, namely Apple, also ploughs a lonely furrow beside the industry standard of FM (frequency modulated) format disks. At last the new drives have the capability to read and write FM disks, although the trade-off being apparent only in CP/M mode.



"Peripherals make 128 attractive in its own right"

All of these peripherals make the 128 an attractive system in its own right. What seems to be against it all are the two factors of pricing and availability during the peak selling season, namely the last quarter of the year. Competition in Western Europe in general and this country specifically are at haemorage levels. As things stand Commodore have an uphill task, the balmy days of a sellers market have gone forever.

The 128 is a good, solid machine with no single element that causes it to stand out from the competition, including that from inside Commodore itself, (it cannot display 121 colours unlike the Plus/4 and C16). The technology incorporated into the machine is tried and tested with no huge advances in pushing back the frontiers of computer hardware. Conservatism has its place and Commodore have played the 128 itself straight down the middle. To exploit it to the full will be expensive and possibly time-consuming to users.

Any software that is made available for the 128 running in native mode is likely to be straight upgrades of 64 material. This software is likely not to have a great deal of front end differences other than the 80 column display; the differences will be apparent in actual use such as longer documents held in memory when using a word processor. How much operational speed improvements will be attributable to the 128 rather than the faster disk drives is open to conjecture, time and experience will tell. One thing I must warn potential purchasers of software about is the tendency of some software houses to slap a 128 label on *any* C64 software that now leaves the warehouse. *Make certain that it is meant to run on the 128 itself and not a 128 masquerading as a 64.*

"Is the ability to switch modes an attraction?"

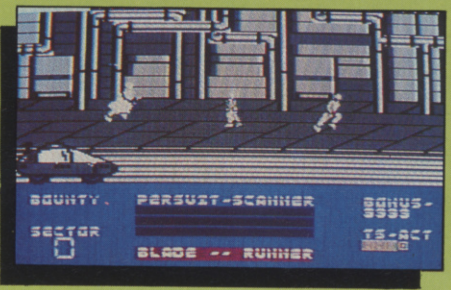
Its singular attraction is the ability to switch modes between 64 compatibility and CP/M, but is a CP/M user going to be interested in the 64 and vice versa considering what is visible on the horizon now?

1985 has been a traumatic year for makers of home computers. The fall and rise (?) ofAcorn and Sinclair, the explosive growth of Amstrad, have made many owners both existing and potential, very nervous and wary of parting with their money.

1986 will be a turning point for home computers and manufacturers. This country has the highest number of home computers owners per head of population in the world, a fact not unnoticed by ATARI. The level of consumer perception and ability are the two factors that are constantly underated by computer manufacturers and the continued blindness to these facts will lead then further into the chasms of financial woe.

Fame Games cont

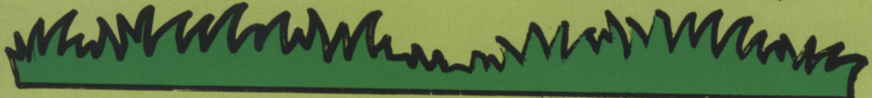
COMING SOON...



BLADE RUNNER

All games reviews appearing in this magazine are personal opinions and serve only as a guide to new games on the market. Our star ratings for graphics, sound, playability and CCI ratings are as follows:

* = Poor
** = Average
*** = Good
**** = Very Good
***** = Excellent



BLADE RUNNER

It's very odd to be writing a review of a game based on the musical score of the film, which after 'The Graduate', I have seem more times than any other. CRL are the software house responsible, and from what I've seen they haven't let me down.

They couldn't track the rights to the film down, so the music had to do, and the film score has been translated pretty well to the 64, using some clever touches.

The game is based on the section of the film where Harrison Ford chases and kills the Replicons. Graphically the game is neat (although I only saw a pre-production version), and especially the street chasing sequences; which when finished could be quite outstanding.

Luckily the map of the sectors you must search is completely random, meaning the game will not lose its interest after two or three games.

It would have to be the best computer game of all time to live up to the film, but CRL have done very well and I await the finished version with bated breath.

RUPERT AND THE ICE PALACE

It's odd to see Rupert portrayed on the screen, moving. I always remember him as a little colourful character never dong anyone any harm, and saving the day on countless occasions from thief or enemy spies.

In Rupert and the Ice Palace, (a follow up to Rupert and the Toymakers Party) you must help Rupert rescue all his friends, who are being held captive by the wicked creatures at the Ice Palace, and return them to the peace and tranquility of Nutwood Cottage.

Argus Press Software have put a lot into the Rupert name – and it shows. The graphics are excellent with smooth graphics of both Rupert and all the baddies movement, and the jump is just as you would imagine; more of a bounce.

The sound too is good; a nice tune, and some good effects when you either get killed or save one of your friends.

The first level consists of four separate rescues, not very SAS like but rescues none-the-less, then you progress on to the much more difficult levels where you really must be a dab hand at controlling your likeable bear to succeed.

If you are a Rupert fan (as I am assured the author of this program was), you will love the game, otherwise you will find that it is **an above average ledge game with excellent character definition and some neat programming methods.**

Fast Loader: Not Very
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ****
Price: £7.95
Contact: Argus · Press Software, Liberty House, 222 Regent Street, London W1R 7DB. Tel: 01-439 0666.

RED ARROWS
JAMES HERBERT'S
THE RATS
Frank Bruno's
BOXING
COMMODORE
RUPERT

GAME OF THE MONTH....

Broderbund

Stealth is an American title recently released by Ariolasoft. Read on to see what the CCI Readers Panel say.

Stealth is one of a group of new releases from Ariolasoft which they have imported from America. Most people appear to have heard of the game before its arrival, as Tim Burke, 16 of Manchester showed in his introduction; **"Although this game has been available in the States for quite a while, it has taken until now to rear its rather violent head here — and not before time!"**

These words of enthusiasm were not echoed by all, however, Paul Serbert, of Harrogate takes up the games description; "You must skim your Stealth Starfighter over a planet's hostile surface to reach and obliterate the Dark Tower. Heat seeking missiles fired from radar towers, armed bunkers, photon tanks and warp fighters are intent on stopping you".

One point that everyone agreed on was the quality of the graphics, as Neil Edwards of Kent and Luci Kershaw of Teddington pointed out in these comments, Neil first; "When the game first loaded I was impressed by the very detailed graphics, and the vast array of colour in both fore and background, with its stunning 3D effects, Stealth was great to play though maybe lacking a bit in originality".

As Tim Burke pointed out, Stealth owes a lot to other, earlier popular computer games; "Stealth obviously has its roots in the 'Buck Rogers'/'Star Wars' school of shooting — but successfully manages to enhance their finer details and eliminate the more mundane points."

The sound did not impress all, and Paul Serbert particularly points this out; "A rather bland tune accompanies the title page, but there is no music to complement the action. Rather you get a wide range of whoosh, zap, bang and blast noises."

Unfortunately John Archer, of Kent, was not overly impressed; "The high score table and special rating to sum up your overall performance add to the game, but lack of variety and lasting challenge make this game an unworthy buy."

Julien Francois commented on its shoot-em-up qualities; "As blasts go this is one of the best; smooth scrolling, sharp graphics, and a whole horde of nasties. The 3D graphics are well designed and believable, duck those tanks and they come outta the screen!" (well nearly! FKJ).

At this point I thought I'd put in my own personal view to reinforce the readers views. With the current trend for American software, it came as no real surprise that Ariolasoft brought in Stealth. It is a really good game — as far as it goes. It amounts to an updated shoot-em-up, with some lovely extra touches.

To sum up this month, we have yet another mixed bag, but draw your own conclusions, I certainly can't!

CONCLUSIONS

"You would do best to **hang on to your hard earned cash,** or buy the original 'Buck Rogers' if you are longing for such a blast" — Coffey.

"Han Solo's favourite game and **a must for shoot-em-up fanatics** as Stealth is fast and furious" — Francois.

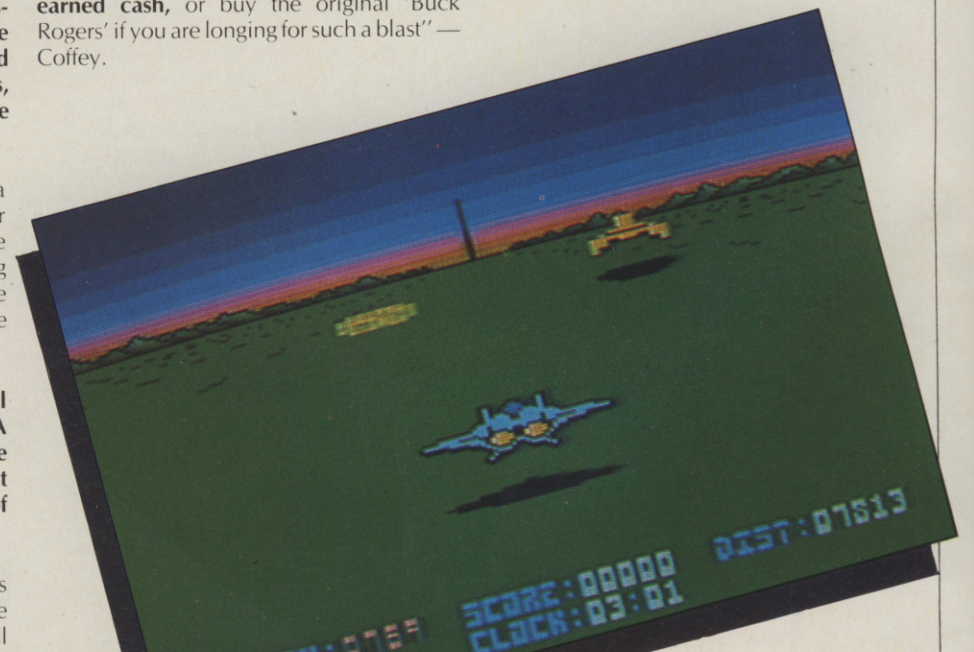
"Nice graphics, shame about the game" — Archer.

"It's not a game that will be played once or twice then forgotten; **it will be played over and over** and could be quite addictive" — Kershaw.

"The graphics are simple but effective, but it is too easy to complete and has **limited appeal**" — Burke.

"Although this is not a very original game, it is well done and **should appeal to zap-em fans** not wanting too difficult a challenge" — Serbert.

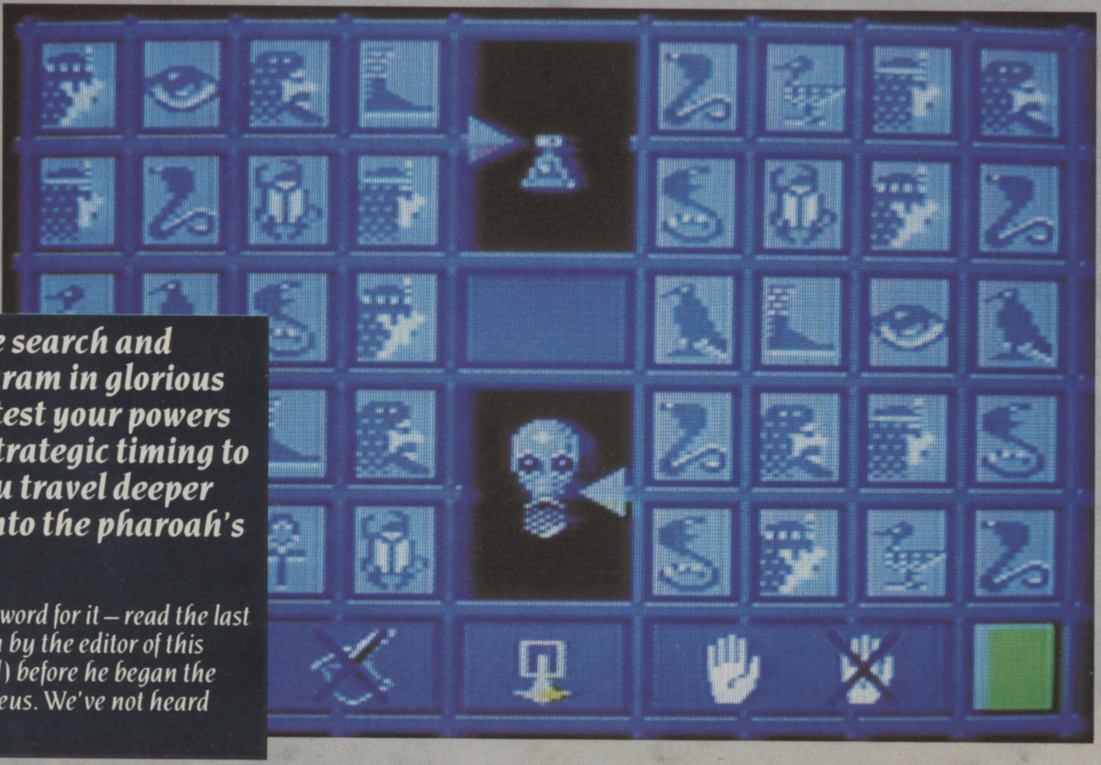
"Fulfill your life-long dream of being Luke Skywalker and do battle against the forces of evil by yourself, oh go on, BE A DEVIL" — Edwards.



Discover

SCARABAEUS

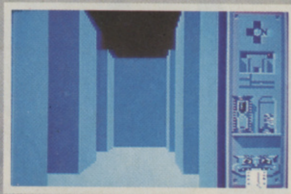
The Emerald Of The Pharoah

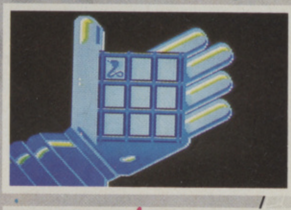


An incredible search and survival program in glorious 3D that will test your powers of logic and strategic timing to the full as you travel deeper and deeper into the pharoah's tomb.

But don't take our word for it – read the last diary entry written by the editor of this magazine, (sic – ed) before he began the search for Scarabaeus. We've not heard from him since . . .

"I have begun my quest to find Scarabaeus, the fabulous emerald jewel of the pharoah. It lies buried with the pharoah deep inside his clammy tomb. Alone I enter the deadly portal only to be bitten by a venomous spider! Now my very existence is in mortal danger. I must find the hidden medicines to cure my deadly wound before I am no more! My heart is weaker now and I may not live long enough to search the exhausting and disorientating maze. If I do, I may not have the strength to battle the patrolling zombies and capture frenzied ghosts. Whilst in the maze, I must collect hieroglyphic codes which enable me to locate the key to the Pharoah's coffin, determine medicines from poisons and collect zombie traps. Even without my weakened condition, I must acquire these codes if I am to stay alive! The thought of a new dawn seems distant to me now as I begin my descent into the dark horrors of the Pharoah's tomb to find the mighty Scarabaeus!"





SCARABAEUS
Fast Load
Chrome Tape
COMMODORE 64
128 Compatible
The Incredible 3D Search and Survival Program
ariolasoft

SCARABAEUS

AN INCREDIBLE CHALLENGE

OUT NOW

ON DISK OR CASSETTE FOR YOUR COMMODORE 64

AVAILABLE FROM ALL GOOD SOFTWARE RETAILERS – *if it's not there, please order it – or in case of difficulty send your crossed cheque/P.O. made out to* **Ariolasoft U.K. Ltd.**, *including your own name and address, to*
Ariolasoft U.K. Ltd., Suite 105-106 Asphalte House, Palace Street, London SW1E 5HS.

Commodore 64 *Disk* – **£12.95**/*Cassette* – **£9.95**

Prices include P&P. UK orders only. Please allow 28 days from release for delivery.

ariolasoft

HIGH PERFORMANCE PROGRAMS

Win Top US Gold Games

Winter Games has been enthusiastically received (see mega review in this issue) by all. CCI is very pleased to be able to offer a copy of this excellent game to 10 lucky winners.

And if that's not enough to tempt you to enter, the 10 winners will ALSO receive a copy of Desert Fox and Fight Night (see review) — both from US Gold.

This attractive package of games will test not only the strength of your joystick, but your powers of logic as well.

All you have to do is answer three simple questions on the subject of winter games.

Answer the following questions:

1 How often are the Winter Olympics held?

A ______________________________

2 How many different sports are represented in the Winter Olympics?

A ______________________________

3 Where were the last Winter Olympics held?

A ______________________________

NEXT MONTH one lucky reader is going to win literally hundreds of great games. Don't miss the next issue to find out how!

Win Topper The Copper

Topper the Copper, from English Software, puts you in the role of detective with a homicide to solve. Was it Dr Mustard Poison or Prof Brown Noose? Collect eight clues hidden around Mad Marvin's caverns and the mystery will be solved.

If you can answer the following questions, you can win yourself the opportunity of solving the murder with one of the 50 free copies of Topper The Copper we are giving away.

Answer the following questions:

1 What was the name by which the forerunners to the police were known?

A ______________________________

2 What man was responsible for the founding of the above force?

A ______________________________

3 Who is the current Police Commissioner?

A ______________________________

All entries must be received by 9 December 1985. Feel free to send a photocopy of the page if you don't want to cut the magazine up.

The winners will be the first correct entries drawn out of our competition sack.

Send your entries to:
Software Competitions,
CCI,
40 Bowling Green Lane,
London EC1R 0NE

Name ....

Address ....

....

....

....

Beat the Drum

No more beating about the bush with Syntron's new Digidrum II – it says drum and it means drum. Ian Waugh (author of Commodore 64 Music) grabs his sticks.

We are all familiar with drum machines, they are used on most pop and electro-pop records. You can tell a drum machine when you hear one because it sounds just like a human drummer – only it doesn't make mistakes. Actually, you can program some machines so that they *do* make mistakes so people won't think they're drum machines. Confusing, isn't it? Most of the drum sounds sounds are sampled from real drums and stored in chips so the sound they make is very realistic. Such machines, even those which can't be programmed to make mistakes, cost quite a few pounds – hundreds, in fact.

Syntron's Digidrum, costing an unbelievable £65, (reviewed in CCI October) was first launched on an unbelieving public several months ago and the little box of tricks was so impressive it was hard to believe. The software has since been improved and has given rise to Digidrum II. The secret of the Digidrum lies in a little black box which plugs into the 64's user port. Sounds are loaded from disk, not stored on a chip, and the box, a digital-analogue converter, does the work of producing drum sounds from the software. A jack socket at the back of the box is for connection to an amplifier and a phono socket provides a one-pulse-per-beat trigger output for synchronising with other equipment.

The program is driven from a menu screen:

1 = Program Rhythm Patterns
2 = Compose Songs
3 = Directory Display
4 = Load Patterns + Songs
5 = Save Patterns + Songs
6 = Load Sounds
7 = Save Sounds
E = Erase all Patterns + Songs
T = Set Temp

digidrum
SYNTRON
digidrum
PROFESSIONAL DIGITAL DRUMCOMPUTER
WK-N12A2G

Menu option 1 allows you to program up to 51 different drum patterns. Each pattern can contain up to 38 beats and each beat can play up to three separate drum sounds. The cursor keys control movement around the screen and drums are entered into a pattern by pressing the following keys which are listed down the right of the screen: C (Crash cymbal), O (Open high hat), H (Closed high hat), D (Drum – small tom), S (Snare), G (Grand tom), F (Floor tom) and B (Bass drum). Some combinations are not allowed, however, such as the cymbals and high hats, but you can't program anything the Digidrum can't play and this is no real limitation.

Once a few patterns have been programmed, they can be chained together to form a Song using menu option 2. A song, as its name suggests, is a complete drum track. A song can hold up to 100 different steps; each step consists of a pattern number and the number of times it is to be played. A pattern can be repeated up to 99 times and up to 10 songs can be stored in memory at one time. Options 4 and 5 load and save patterns and songs so you can build up a library of tracks to suit your music.

Having programmed flams and fills that even Buddy Rich couldn't play, how do our drums and his compare? Well, ours are pretty good, considering that one of his cymbals would be twice the price of our whole drum kit. There is room for improvement with the crash cymbal and the toms but as it stands the Digidrum holds its own against the cheaper end of the drum machine market.

But the story doesn't end there. Because the drum sounds are software based and stored digitally on a disk, it's a simple matter to introduce new software-based sounds. This is what Syntron have done and a second disk containing over 40 new sounds is already available for £16.50 – which works out at approximately 41p per drum. New drums include a wide range of different tom, cymbal and high hat sounds plus more regular and exotic instruments such as a shaker, metal bar, rattlesnake, cowbells, hand clap and rim shots. Complete drum sets include Latin, Glass and Syn drum sounds. Instruments can be saved and loaded individually, allowing you to construct your own drum kit. Perhaps they should have called it the Drum Kit Construction Set!

The Digidrum would fit very well into a home studio. In fact I would not be at all surprised to hear the Digidrum on a commercial recording. An added bonus for all Digidrum owners is free membership of the Syndromic Userbase which includes a free subscription to a quarterly magazine about computer music. They will, of course, also receive details of new sound samples as they become available. Now, is that a good deal?

I wonder if Syntron have any more musical goodies up their sleevies. I hope so.

Contact: Syndromic Music,
35A Grove Avenue, London,
N10 2AS. Telephone 01-883 1335.

Sound Buggy

Jason Johnson is bullied into a music lesson and finds himself in the driving seat, in the fast lane, knocking down musical barriers. Has he a licence for all this?

Few things can be as difficult as getting music out of a computer. Even professional musicians often spend more time arranging and programming their tunes than they do writing them: a piece of music lasting three minutes could take three hours to program — or longer. So, what chance do we lesser mortals have — those of us with a musical bent (no, they can't touch you for it) but no desire to be come immersed in the niceties of music notation?

As if in answer to such thoughts, Siel's R&D team have developed the Sound Buggy. At a RRP of £99, it's purpose is to minimise the amount of musical knowledge and effort you put in and maximise the amount of music you get out. To achieve this it uses its own sound synthesiser — bye bye SID — and the accompanying software has facilities to create a lead solo sound, an automatic accompaniment section and a rhythm track, all of which can be recorded, stored and played back at will.

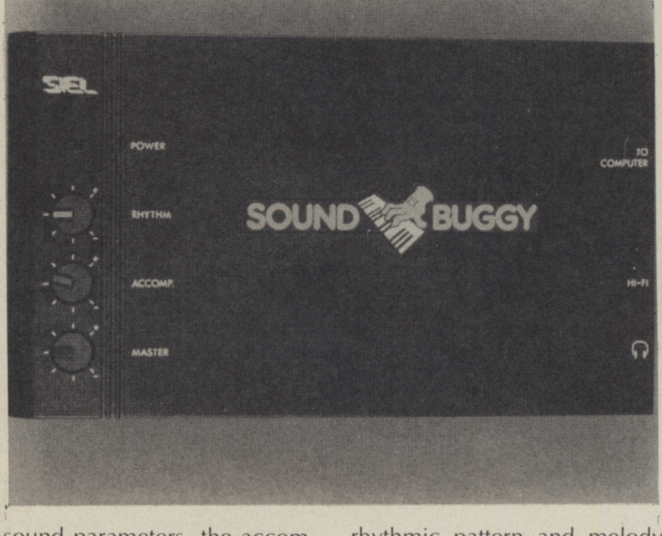
The Buggy is a tidy flat box in Siel's house colours — grey — with jack and phono outputs for connection to headphones or a hi-fi. Music is entered into the system with Siel's mini clip-on keyboard which is supplied. You can also use Commodore's clip-on version or Siel's full-size CMK 49.

Getting down to business

Once you've plugged in, clipped on and loaded the program, available on disk or cassette, you can get down to some music making. The program is menu driven, controlled by the fuction keys. If you get stuck, the CMDR key causes a help message to pop down onto the screen and it is more than likely that you will be able to dispense with the instructions after a reading or two.

There are five options on the Main Menu page; End of job, MIDI Functions, Play, Disk Operations and Song Menu. The Song Menu lists the songs stored in memory and nine demos include disco, big band and Latin American numbers. Selecting a song or the Play option takes you to the Song Edit screen which is the main working display. The top line shows the song name and number. Below this are four windows which control each of the four main music sections: solo sound parameters, the accompaniment pattern, rhythm details and a sequencer section.

Instruments are created with footage settings of 16', 8', 4' and 2', rather like the drawbars found on some organs. These are set at volumes ranging from 0 to 31. Envelope or ADSR (Attack, Sustain, Decay, Release) parameters can range from 0 to 7 while a p.env setting will quickly lower the volume after each note has sounded. Fourteen sounds have been preprogrammed, 28 can be stored in total and all can be altered.



Choose your accompaniment

After recording a solo line, you can then arrange an accompaniment for it; you can even do it the other way around if you wish. From the accompaniment section you can opt for o.f.c. (one finger chords) by playing the lower set of QWERTY keys, or you can make up your own with the teach option. The program uses the chords to produce a bass line and arpeggios and these can be selected for output individually. Rhythm plays the accompaniment in a rhythmic pattern and melody triggers a whole chord when each melody note sounds.

The rhythm section can hold 24 rhythms and 14 examples load with the program: Latin, swing, disco and funk beats — just right for improvising over. To program a rhythm, a new screen is called up showing sub-divisions of the bar. Five drum sounds are used: bass, snare, rim shot and two cymbals. These are inserted by pressing a key and removed by pressing the same key again. Drummers say that every keyboard player wants to be a drummer and this section lets everyone try their hand. It will keep the kids amused for hours — providing you can prise Father away from the machine.

Loop your composition

The last window, the sequencer, is used to determine which part of your tune you wish to play and record — the solo (melody) line or the chords. You can also loop your composition so it plays continuously.

The Disk Menu controls the loading, saving and erasing of songs. One selection will even format a disk for you, an option which should be made compulsory on utility programs. Good thinking.

Apart from the Sound Buggy, Siel also produce synthesisers, allied equipment, MIDI interfaces and software packages. The Buggy's MIDI menu offers a step into the musical world where the big boys play. A MIDI interface is required, however (Siel's costs around £99), along with at least one MIDI-equipped keyboard. The solo, bass, chords and argeggio sections can be routed to different synthesisers for a marvellous, full synth/orchestral sound — such is the power of computers. If you have a multitimbral synth such as a Casio CZ-101 or CZ-1000, each part can be assigned to a different voice. Very impressive, indeed.

If you've got the music in you, the Sound Buggy might just help bring it out. It might even encourage you to explore the music potential of your computer a little further which can be no bad thing.

Contact: Siel (UK) Ltd, Ahed Depot, Reigate Road, Hookwood, Horley, Surrey RH6 0AY. Tel: 0293 776153/4.

Sampling the Goods

Sue Pearce looks at a system which claims to be a professional digital sampling system for the 64

With Microsound's Digital Music System, you can not only play back sample sounds at various pitches, but also create complex sounds using such facilities as Dynamic Amplitude Modulation, Definable Pointer Sets, Looping and Mixing different sample sounds.

If that all sounds very complicated, don't panic. Although designed to give musical results similar to those produced by expensive multi-track recording studios, if you read the manual carefully and spend time familiarising yourself with the controls, all will become clear.

The system we had in the office comprised the DMS, disk software and the Microsound 64 keyboard. The slim, grey metal casing of the DMS houses the sound processing unit which controls both the timbre and amplitude of the sampled sounds. It features the following sockets/controls: Mic/line input socket; level control; power/volume control; MIDI in/out sockets; 9V DC socket; and an output socket for connection to amplifiers, mixers etc.

Setting up

Setting up is quite straightforward with the DMS connected to your 64 via the cartridge port.

When loaded, the control master disk gives you the options: sample, control functions, play, edit or disk functions. Incidentally, the software is designed to enable you to use the QWERTY keyboard, or a MIDI keyboard in addition to Microsound's keyboard.

All the usual features have been included. A programmable low-pass filter enables unwanted frequencies to be removed from the incoming signal when sampling to avoid distortion. Another useful feature of the sample function is the inclusion of an on-screen bar graph which enables the user to adjust the input volume from line or microphone to the correct level to trigger the sampler.

Various functions in the play mode include: split keyboard; current pointer set – to give each of the two ponter sets its own independent set of control functions; modulation source; envelope parameters; filter level and looping.

Conclusions

You can really achieve some interesting effects by sampling various sounds. These samples can be edited visually. The fun really begins when you start reversing and mixing samples. Of course, all samples can be saved (to disk).

Microsound's DMS is a comprehensive piece of equipment, although at £145 (£99 for the keyboard) it is a little more expensive than others on the market.

Contact: Microsound Ltd, PO Box 14, Petersfield, Hants GU32 1HS. Tel: 0730 87403.

Value for Money Modem

Used in conjunction with Tandata's own Micro Pack software and compatibility pack this is the normal choice for 64 users wishing to explore the exciting and ever expanding world of micro-communications.

This particular modem allows 1200/75 baud rate communications with the software being set up for terminal use. The Tm110 is a neat looking black box, with all the essential facilities for the budding 'War Gamer', including autodial and auto-redial. The two lights on the front panel indicate whether or not you are on-line, and the normal power on indicator.

Telecom Gold is easily accessed, and apart from the fact that my first two attempts were shortened by excessive line noise, the modem functioned faultlessly.

Tandata Tm 110
Line
Power

Next I tried the Tm110 on the London Underground (no, not the tube), which is the best bulletin board around at the moment, with an excellent Sysop and some really interesting sub-sections. It runs at 1200/75 also and I had no problems whatsoever. I left a message in the 'Modem Spot' of the board about the modem and should get some response soon.

Overall, the Tandata seems to perform very well, and is suited perfectly to the 64. It respresents excellent value for money, and I would recommend it to any 64 owners seeking an entry into communications. FKJ

Contact: Tandata Marketing Ltd, Albert Road North, Malvern, Worcestershire WR14 2TL. Tel: 06845 68421.

COMING SOON...

Whilst at CRL to see a preview of their soon to be released 'Blade Runner', I was lucky enough to get an exclusive look at what else they plan to release shortly.

I must thank all concerned for not making it a wasted day, most of all Ian Ellery, The two games I saw were 'Space Doubt' and 'The Causes of Chaos'.

Space Doubt places you as a little man on a large spaceship; which happens to be taking essential food supplies to another, starving, planet. Unfortunately, mid passage, you encounter a meteor storm which smashes lots of holes into your ship – allowing enemy aliens to get in, and eat your vital cargo.

You have three lives and must try to get to the other planet, with food – and without aliens! The graphics seem quite neat, and the music is very nice (something CRL seem to take very seriously). Although the programmer was still working on it, Space Doubt seemed to have plenty of promise and I hope it lives up to it.

'The Causes of Chaos', my other 'exclusive', is a very interesting concept. With all the success of MUD, CRL are – as far as I know – the first people to try to create its feel on the 64. Unlike any adventure I have played at home, it allows up to six players all to play, having chosen how many moves per turn. Although there are difficulties (what point is there talking on screen to someone your sitting next too??), the overall effect is enjoyable, and on screen fights include reaction tests, so no-one gets immediate advantage.

The game can also be played as a single player adventure, so the game can be played without a group of friends. If this game takes off I believe it could be an important move, perhaps as important as the Hobbit?

Contact: CRL Group PLC, CRL House, 9 Kings Yard, Carpenters Road, London E15 2HD. Tel: 01-553 2918.

TROJAN
CAD-MASTER
THE ULTIMATE IN GRAPHICS TOOLS

SUPERB GRAPHICS SOFTWARE
PLUS
A TOP QUALITY LIGHT PEN

Discover the exciting world of creating your own graphics on screen.

- **FREEHAND DRAW** - 5 pen thicknesses inc. Quills
- **PAINT BRUSH** - for the artistic touch
- **FILL ANY SHAPE** - use 16 colours and 11 patterns.
- **GEOMETRIC SHAPES** - circles, boxes, triangles, lines & banding.
- **DYNAMIC RUBBER BANDING** on all geometric options.
- **PIN-POINT FUNCTION** - for pixel accuracy on all functions.

Plus many more too numerous to mention in this ad. All these features in the Program + a top quality Light Pen and an Instruction booklet in one reasonably priced package. Easy to use for creating colourfull pictures or technical drawings. Ideal for use by all ages of micro users. Full back-up service from manufacturers. Available at good dealers or direct from Trojan Products.

ONLY £19.95 per pack.

TROJAN
Micro Computer Software & Accessories
Send cheque/P.O. to.
TROJAN PRODUCTS
166, Derlwyn, Dunvant, Swansea SA2 7PF
Tel: (0792) 205491.
TRADE ENQUIRIES WELCOMED

If you only want to play games don't cut out this ad.

Because after LPA micro-PROLOG games are just kids stuff. It's a powerful programming language that can be usefully applied in a short time that points the way to computing of the future. Japan has chosen PROLOG.

And though it's not a game, it is fun.

Orders can be despatched before Christmas so send now for full details.

LPA micro-PROLOG

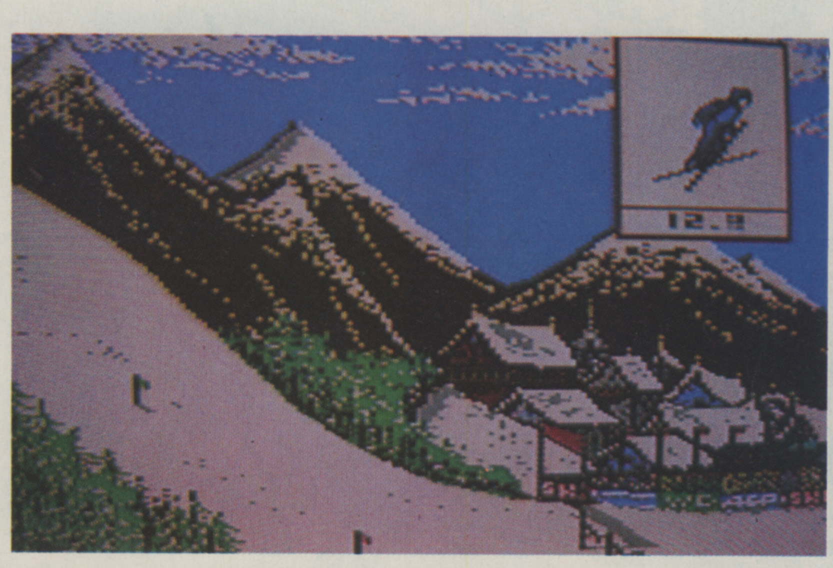
Logic Programming Associates Ltd. Department CCI/1, Studio 4
The Royal Victoria Patriotic Building, LONDON SW18 3SX.
Tel: 01-871 2016

Winter Games

With the runaway success and rave reviews that both Summer Games and Summer Games II received, it was no surprise that US Gold were eager to import Epyxs' latest sports simulation title Winter Games — especially as summer seems to have been pretty non-existant this year.

If you own Summer Games II, you will recognise large parts of Winter Games. The loading display is the same, and the opening ceremonies very similar.

The actual events, however, are different, though no less challenging. Having selected your name and the country you wish to represent (a la Summer Games II), you are given the same options of competing in all the events, some events, or a variety of practice and other options.



Having decided to compete in all the events you are thrown immediately into 'Hot Dogging'. For those of you who have never seen the maniacs doing this in real life, this will be the closest you will ever want to come to suicide! You must ski down a short slope, taking off, and complete as many stunts as possible before landing. There are six possible stunts including forward and backward somersaults, and a variety of other leg-splitting antics.

Your score is displayed out of ten, with each country scoring individually and the total being averaged. One occasion I managed to get 9.2, but never higher!

Next is the Biathlon. This one's a real bugger! It consists of you as a cross country skier, who must ski up slopes, down slopes, and along the flat, until reaching a target range where you must hit five targets. This is repeated four times and, for every target you miss, a five second penalty is added to your time. As with all Epyx games it is the small touches that make the game so exceptional, and in this case it is your heart-rate, which is displayed and must be steady before you can fire accurately.

Figure skating and Free skating are similar in many respects in that you must perform certain jumps, spins and reverse salko triple toe loops (eh??). These must be performed in time with the music and as elegantly as possible.

The difference between Free and Figure is that in Free you have two minutes to perform as many tricks as possible, whereas in Figure you must use a set routine.

Both the music and graphics are excellent, and the only way to impress the judges is to practice until you have perfected your own routine (budding Jayne Torvills will love it!).

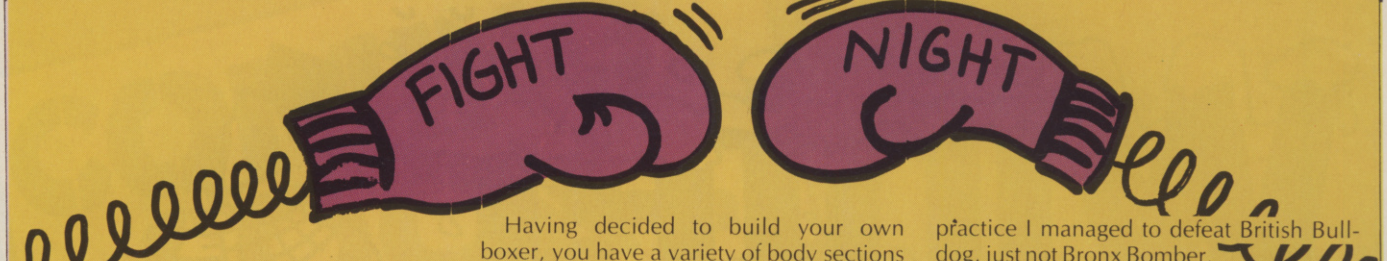
My personal favourite was the Ski Jump. Mainly as it must be one of the few sports which no-one with more than half a brain would ever try. You must leap off a 90m jump and control your little man, keeping him straight and flat, and landing perfectly. Your score is combined between distance and style. I managed to get 213.8pts and that's after many, many attempts!

Speed Skating, the next event, is a question of technique, more than pure waggle power. If you played the rowing option on Summer Games II, you should have no difficulty in getting this one sussed!

Finally, the Bob-Sled. This involves using the joystick equivalent of opposite lock to guide your bob sleigh down a complicated but possible course as fast as possible. Again the graphics are excellent and you can almost feel the wind rushing through your monitor!

I'm running pretty short of superlatives to use for Epyx games, suffice to say that this must be one of the most exceptional games I've seen on the 64. **FKJ**

Fast Loader: Yes
Graphics: *****
Sound: ****
Playability: *****
CCI Rating: *****
Price: £9.95
Contact: US Gold, Unit 10, Parkway Industrial Estate, Heneage Street, Birmingham B7 4LY. Tel: 021-359 3020.



Dambusters was a real favourite of mine, it managed to keep me playing it for an awfully long time, when most games had been and gone. It was with a great deal of pleasure, therefore, that I loaded Sydney's newest game – 'Fight Night'.

Using the base of a boxing game, 'Fight Night' manages to combine strategy, reaction, and more than a little violence. On loading from disk you are shown a variety of play options including building your own boxer, fighting in the 'Fight Night' championships and training your boxer.

K.K.
HATE
HATE

Having decided to build your own boxer, you have a variety of body sections to use, and with a little imagination you can create some pretty odd looking competitors.

It is when you actually start boxing that 'Fight Night' shows it's true colours. With an excellent display of the ring and some beautifully animated graphics, verging on cartoons, I spent my first few fights just watching!

As in Frank Bruno's Boxing you must work your way up through the ranks by beating other contenders. In 'Fight Nights' case there are five pre-programmed ones

Dip Stick and Kid Kastro, the first two people you must fight, are both relatively easy to beat, although Kid Kastro needs a little persuasion to make him eat his cigar! It is immediately apparent that Sydney have gone for a different approach to everyone else. Instead they have tried to make it a little more amusing than your average "kick in the teeth game".

Hu Him, British Bulldog, and the champion, Bronx Bomber, are all bloody difficult (to say the least!); although using a lot of determination, and many hours of practice I managed to defeat British Bulldog, just not Bronx Bomber.

If you want a game with cartoon-like animation, excellent gameplay, and amusing sound, 'Fight Night' is definitely for you.

Graphics: *****
Sound: ****
Playability: ****
CCI Rating: ****
Price: £9.95 cassette.
Contact: US Gold, Unit 10 Parkway Industrial Estate, Heneage Street, Birmingham B7 4LY. Tel: 021 359 3020.

SEETHE
SEETHE
88

Who's living in your computer?
'IT'S ME!'

THE LITTLE COMPUTER PEOPLE PROJECT

In our October issue we gave you a sneak look at Activision's innovative new program. It's not a game, but a way of providing housing for that little person who lives inside your computer – you know the one!!

On loading the disk, you enter your name, the date and correct time (only date and time required on respective occasions). The inside view of a house appears and after a short while there is a knock on the door . . . enter the little computer person (LCP).

Each LCP has his own personality, and a dog as his companion. It's a matter of luck as to whether your LCP is shy, extrovert, talented or anti-social.

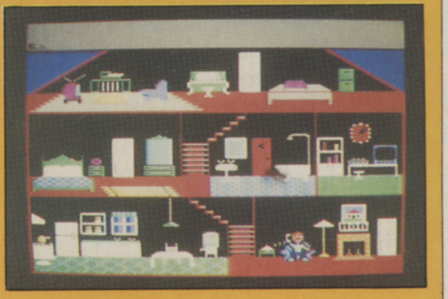
Our LCP introduced himself as Bronson, and he's great – a fantastic pianist, keep-fit addict, reasonably tidy but with a tendency to sulk (particularly when we beat him at cards).

They don't need much attention. Just make sure he and his dog have enough to eat and drink, pet him occasionally, and keep his book and record collection up to date. (All these comands require the control key plus one other, eg CTRL C for a telephone call.)

LCP's speak a strange language on the phone, but can converse with you via typewritten letters – all headed with the correct date and time.

Graphics are very good. My favourite touch is when Bronson tries to attract our attention by rapping on the inside of the screen with his fist! Sound is also excellent with ringing telephone, doorbell, piano and the flushing of the toilet, to name but a few!

Bronson never ceases to amaze us with newly discovered talents – and cheekiness! **You'll have hours of fun with a little computer person.** Don't neglect them, they can die of thirst, starvation and even, lack of affection. I could carry on for hours about Bronson, but suffice to say he is terrific!



Price: £14.95 (disk)
Company: Activision, 15 Harley House, Marylebone Road, London NW1. Tel: 01-486 7588.

M'LORDS, LADIES, & GENTLEMEN... FRESH FROM AMERICA
U.S. GOLD PROUDLY PRESENTS... THE UNDISPUTED CHAMPION...

FIGHT NIGHT
SMAK!
WAKELIN.

FIGHT NIGHT

From time to time a software title is released, so innovative that it breaks new ground in graphical and technical achievement — Fight Night, the first animated simulation on the C64 is more than a game, more than a simulation — it is a revelation!

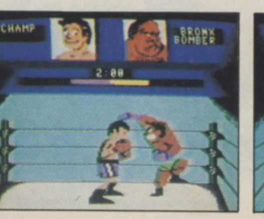
"It has class, it has style — forget the rest, Fight Night is quite simply the absolute best." — Tony Takoushi Computer & Video Games/Computer Trade Weekly.

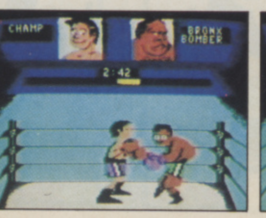
"It's like watching and playing a cartoon computer version of Rocky. Fight Night has pushed the graphical capabilities of the C64 to its utmost limits" — Zzap 64 November.

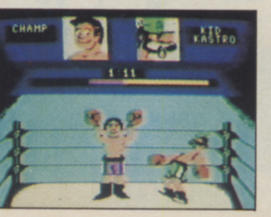
U.S. GOLD
All American Software

Sydney Development Corp.

CHAMP
BRITISH BULLDOG
2:15


CHAMP
BRONX BOMBER
2:00


CHAMP
BRONX BOMBER
2:42

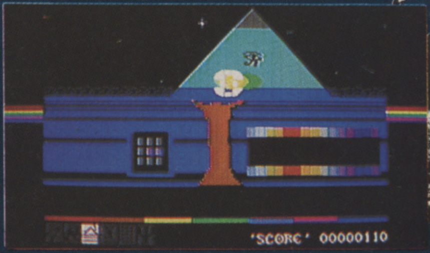

CHAMP
KID KASTRO
1:11

Available for Commodore 64

Cassette £9.95

Disk £14.95

BATALYX



In a way I was a little sad to hear that Llamasoft games were now being distributed by Ariolasoft, but if they are all as good value for money as Batalyx, I'll be very happy!

Basically Batalyx consists of five separate games, all interlinked, with one 'Relaxation mode' (Cheers Jeff??!!). Hallucin-o-Bomblets, the first game, was my favourite as it allows you to clock up a huge amount of points without losing too many lives. You must move your circular pod around by firing in the opposite direction; as if you were in a gravityless world.

Attack of the Mutant Camels II is, as you would expect, a rehashing of Jeffs most famous game, improving on the few criticisms of the early game. It still reminds me of the early days of my 64!

The Activation of Idris Base is a relatively new one on me, and some of the movement and backgrounds had me totally lost.

Cippy on the Run, the fourth game, is a re-hashed Sheep in Space, only with a man/goat thingy running about instead of goats. Smooth scrolling and some neat graphics keep you relatively well entertained.

Syncro was a pretty ordinary game that Jeff had published in a pretty ordinary magazine! In Syncro II it's much the same except for some pretty odd polyphonic effects which have been incorporated.

Psychedelia, the relaxing stage makes me feel sick, not relaxed so I won't bother telling you about that: find out for yourself, but get a bucket ready!

If these games were released individually there would still be people willing to pay eight quid for them, but **at £9.95 the lot it represents outstanding value,** and if you don't own a Minter game, buy this one — you won't regret it!

Fast Loader: Yes
Graphics: ****
Sound: ***
Playability: *****
CCI Rating: ****
Price: £9.95
Contact: Ariolasoft, Asphalte House, Palace Street, London SW1. Tel: 01-834 8507.

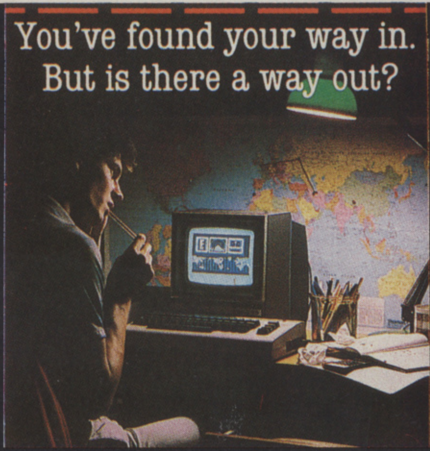
HACKER

War Games has an awful lot to answer for when it comes to the mystique surrounding 'Hacking'. In the three-month period after the film's release in America, nearly 500 new bulletin boards, all with Hackers sections, sprung up. It was during this period that hackers got a bad name, due mainly to inexperienced kids talking too much!

With the release of this game Activision has tried to capture the excitement, but this time without the illegality.

Hacker starts with a blank screen, bar the word "LOGON?". This, together with the fact that it's essential to take notes, are just about the only true-to-life parts of the game.

The objective of the game it to travel about the world, through a series of underground tunnels, collecting morsels of information from various spies who are located all over the world. **Graphically Hacker is very nice, with smooth scrolling and some lovely and distinctive views of the cities you must visit.**


You've found your way in.
But is there a way out?

Something which is truly reminiscent of late nights in front of the terminal is the frustration which Hacker causes – just when you thought you'd succeeded, you get kicked out of the system, and must start again!

Overall, Hacker is an extremely glamorised version of a very lonely pastime. Eventually it will undoubtably get repetitive, but until then it is enjoyable and challenging, and most of all it saves the phone bill! (Blue Box anyone??)

Fast Loader: Flashload
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ***
Price: £9.95 cassette.
Contact: Activision, 15 Harley House, Marylebone Road, London NW1 5HE. Tel: 01-935 1428.

HACKER
WHERE AM I?
HELP!

MICROSOUND DIGITAL MUSIC SYSTEM

THE FIRST PROFESSIONAL DIGITAL SAMPLING SYSTEM FOR THE COMMODORE 64

SYSTEM SPECIFICATION

Sample recording
User definable trigger level, trigger delay, input filter level (bandwidth 4 - 15KHz), and sample rate (4 - 33KHz).

Real time bar graph display of input level with clipping indicator.

Sample editing
Mix, reverse, loop or delete any part of the sampled sounds.

The full 40K sample memory displayed on one screen, complete with two sets of start/finish pointers and the edit cursor.

Select any section of memory for the storage/playback of samples.

Sample playback
Via Microsound 64 keyboard. Envelope/LFO control of amplitude, LFO rate controlled in real time by the keyboards slider control.

Programmable output filter level and looping on/off function.

Samples played back over the full 4 octave range with no distortion.

Split keyboard facility allows all the aformentioned functions to be programmed for EACH half of the split.

Via QWERTY keyboard. All the above except LFO modulation.

Via MIDI. As QWERTY but with programmable MIDI channel allocation.

Sample storage
The 40k sample area can be saved directly onto disk along with all the user defined variables set up in the program (eg. envelope levels, filter levels etc.) This allows the sounds to be loaded and played back exactly as they were set up originally. Files may be deleted if necessary.

A catalogue of the sound files on the current data disk is also displayed.

Hardware
A robust, compact unit measuring just 230 × 120 × 35mm.

Built in MIDI interface for the reception transmission of MIDI data.

Pre/de-emphasis circuits to eliminate quantitisation noise.

Programmable 24dB anti-aliasing (distortion) low-pass filter, bandwidth variable between 4 and 15KHz.

Digitally controlled output amplifier for real time envelope LFO modulation.

Input amplifier with adjustable input level, suitable for mic or line signals.

Output volume control and power on off switch.

Power supplied either by battery or optional AC adaptor.

Connection via COMMODORE 64 cartridge port.

System described above (excluding keyboard) ONLY £145 inc. VAT and P & P

7 days money-back guarantee
Dealer enquiries welcome

Microsound 64 keyboard and SiD-based polysynth software (still the best available) NOW ONLY £99 inc. VAT and P & P

Microsound Ltd., PO Box 14, Petersfield, Hants. GU32 1HS. Tel: 0730 87403

ATLANTIS SOFTWARE
PRESENTS
"TRIGGER HAPPY"

20 LEVELS OF ENTHRALLING SPACE ACTION
CBM 64 JOYSTICK ONLY
SPECTACULAR GRAPHICS
WITH 3D EFFECTS
3 SOUND CHANNELS

TEST YOUR REFLEXES AGAINST THE MIGHT OF THE ZOG EMPIRE
FEATURING SNORGOL, THE EVIL GHOST WHO HAUNTS THE DEEPEST RECESSES OF SPACE

Cassette £4.50 Diskette £8.99
40p. P&P

Cheques/POs to: DEPT CM
ATLANTIS SOFTWARE
26 Thalassa Road, Worthing
West Sussex BN11 2HJ

Simulation Software for the CBM 64

Title	Type	RRP	Our Price
747 Flight Simulator	FS	12.95	11.65
Air Combat Emulator	AC	9.95	8.95
Aircraft	AC	7.95	7.15
Airwolf	AC	7.95	7.15
Baltic '85 (D)	WG	33.41	30.06
Battle for Midway	ST	9.95	8.95
Battle for Normandy (C)	ST	14.95	13.45
Battle for Normandy (D)	ST	14.95	13.45
Beach Head (C)	ST	9.95	8.95
Beach Head (D)	ST	12.95	11.65
Beach Head II (C)	ST	9.95	8.95
Beach Head II (D)	ST	12.95	11.65
Blue Max (C)	AC	9.95	8.95
Blue Max (D)	AC	14.95	13.45
Blue Thunder	AC	6.95	6.25
Breakthrough in the Ardennes (D)	ST	59.29	53.36
Broadsides (D)	WG	38.76	34.88
Carrier Force (D)	WG	58.19	52.37
Choplifter (C)	AC	9.95	8.95
Choplifter (D)	AC	12.95	11.65
Combat Leader (C)	AC	14.95	13.45
Combat Leader (D)	AC	14.95	13.45
Combat Lynx	AC	8.95	8.05
Dambusters (C)	AC	9.95	8.95
Dambusters (D)	AC	14.95	13.45
Drop Zone (C)	AC	9.95	8.95
Drop Zone (D)	AC	14.95	13.45
Elite (C)	AC	14.95	13.45
Elite (D)	AC	17.95	16.20
F-15 Strike Eagle (C)	FS	14.95	13.45
F-15 Strike Eagle (D)	FS	14.95	13.45
Fighter Pilot (C)	FS	9.95	8.85
Fighter Pilot (D)	FS	12.95	11.65
Flight Path 737 (C)	FS	7.95	7.15
Flight Path 737 (D)	FS	9.95	8.95
Flight Simulator II (C)	FS	38.76	34.88
Flight Simulator II (D)	FS	48.48	43.63
Flyer Fox	AC	9.95	8.95
Glider Pilot (C)	FS	8.95	8.05
Glider Pilot (D)	FS	12.95	11.65
Harrier Attack	AC	6.95	6.25
Heathrow ATC	ATC	7.95	7.15
Hellcat Ace (D)	FS	27.72	24.95
IFR (Flight Simulator)	FS	26.80	24.00
Interdictor Pilot (C)	AC	17.95	16.20
Interdictor Pilot (D)	AC	19.95	17.95
Jump Jet	AC	9.95	8.95
Kennedy Approach (C)	ATC	9.95	8.95
Kennedy Approach (D)	ATC	14.95	13.45
Knights of the Dessert (D)	WG	17.25	15.52
Le Mans	MR	11.99	10.79
Midway Campaign (D)	ST	14.03	12.62
Mig Alley Ace (C)	FS	9.95	8.95
Mig Alley Ace (D)	FS	14.95	13.45
Nato Commander	ST	9.95	8.95
Neutral Zone (C)	WG	31.35	28.20
Neutral Zone (D)	WG	31.35	28.20
Night Mission Pinball (D)	AC	33.41	30.06
Operation Whirlwind (C)	AC	11.95	10.75
Operation Whirlwind (D)	AC	14.95	13.45
Paras	ST	6.95	6.25
Pitstop (C)	MR	8.95	8.05
Pitstop (D)	MR	11.95	10.75
Pitstop II (C)	MR	9.95	8.95
Pitstop II (D)	MR	13.95	12.55
Pole Position (C)	MR	9.95	8.95
Pole Position (D)	MR	14.95	13.45
Raid over Moscow (C)	ST	9.95	8.95
Raid over Moscow (D)	ST	12.95	11.65
Solo Flight (C)	FS	9.95	8.95
Solo Flight (D)	FS	14.95	13.45
Space Pilot (C)	AC	7.95	7.15
Space Pilot (D)	AC	9.95	8.95
Space Shuttle	AC	9.99	8.99
Space Shuttle (D)	AC	19.95	17.95
Special Operations	ST	6.95	6.25
Spitfire 40	FS	9.95	8.95
Spitfire Ace	FS	9.95	8.95
Stunt Flyer (C)	AC	9.95	8.95
Stunt Flyer (D)	AC	12.95	11.65
Super Huey (C)	AC	8.95	8.05
Super Huey (D)	AC	14.95	13.45
Theatre Europe (C)	ST	9.95	8.95
Theatre Europe (D)	ST	12.95	11.65
Tigers in the Snow	WG	14.95	13.45
Tornado Low Level	AC	7.90	7.10
Wing Commander	ST	7.95	7.15
Zeppelin Rescue (C)	AC	17.95	16.15
Zeppelin Rescue (D)	AC	19.96	17.95

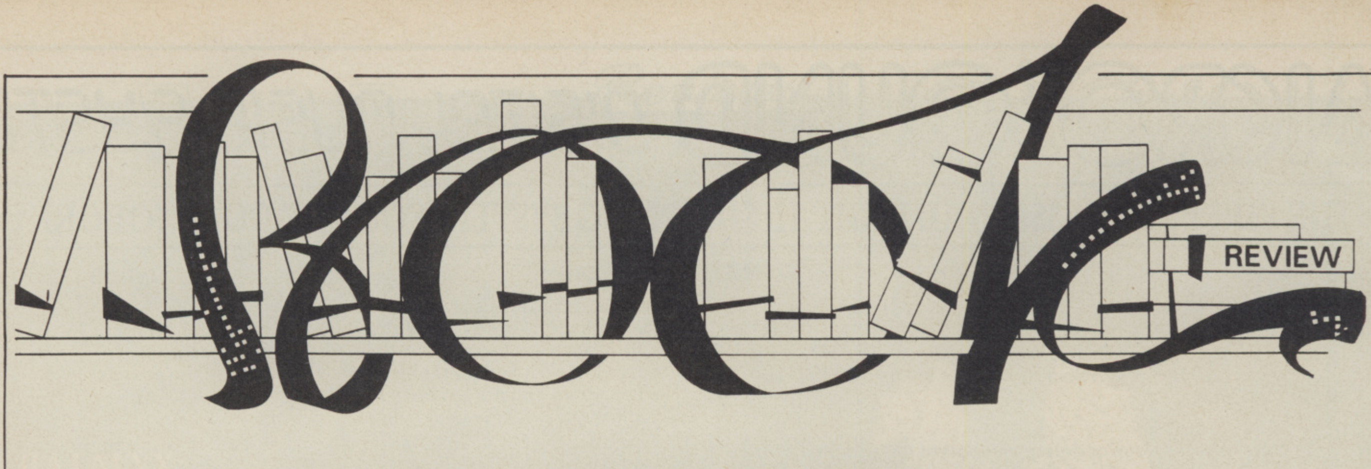
AIRBORNE SOFTWARE SPECIALISES IN THE VERY BEST SIMULATION SOFTWARE AT REALISTIC PRICES – INCLUSIVE OF POSTAGE

FS = Flight Simulation: AC = Arcade Type Simulation:
MR = Motor Racing: ATC = Air Traffic Control:
ST = Strategic Simulation: WG = Wargame

All programs are available on cassette unless shown with suffix (D). Please specifiy (C) or (D) and your machine when ordering.

Send your cheque/postal order to:

AIRBORNE SOFTWARE, P.O. BOX 1940
WATFORD WD5 0DL



Bill Donald peruses the newest computers tomes

MAPPING THE COMMODORE 64 by S Leeman – £12·95

When I first bought my Commodore 64 it rapidly became apparent that some memory locations were more important than others. I suppose the very first memory location number that we all learn is 64738, the cold reset. After a period of time, the collection of useful POKE's and SYS calls became to much to carry around in my own biological memory and probably in common with most serious users of the machine I began to write them down for reference. They were, and still form a very essential aid to programming the machine, but as time went by and my knowledge and experience grew I started to wonder how they worked and could they be modified if required. Armed with "The Anatomy of the Commodore 64" from ABACUS Software (or FIRST PUBLISHING, the UK agent for these books), I was able to start probing deeply into my Commodore 64.

Somehow, or so it seemed, I still hankered for more detail on how the machine functioned and this requirement was admirably filled by the purchase of this book. This is another book well worth watching out for, if you haven't got it already that is! The contents basically wade their way though the memory locations of the Commodore 64, in sequence, with a detailed explanation of what you will find there, and more importantly, what will happen if you change the contents of the individual location.

What sets this book apart from any other of it's type I have ever seen, is the amount of detail included. Rather than use the Commodore source code labels such as VARTAB for locations 45 and 46 ($2D – $2E), which really do not convey a great deal to the inexperienced user, the text explains what the location is for. So, as an example, VARTAB is described as the "pointer to the Start of the BASIC Variable Storage Area", much better, isn't it? Another strong point being the inclusion of short demonstration programs; they say a photograph will speak a thousand words, I am certain the same applies to a computer program. These serve the purpose of explaining the difficult concepts and most of the programs in this book are very useful. It is a similar idea to that used in Rae West's 'Programming the . . . ." series, and I am all for it.

Several of the mystery areas of the Commodore 64 are explained, for instance the mirror images of the 6581 SID chip, which have always intrigued me. Isn't it about time that someone came up with an add-on baord complete with address decoder and another 6581 or two to use up these unused addresses? In fact, the input/output areas are extensively covered as well as the KERNAL itself. I suppose another title for this book could well be 'No Byte Left Unturned".

The publishers of this particular book, namely COMPUTE! have built up a large range of books aimed at maching utilising the 6502 series processor and in previous reviews of some of their publications I have unreservedly slammed them. I feel that this publisher and the American book market in general, produces some outstanding works as well as some utter rubbish, generally in the ratio of 3:1 in favour of the rubbish. However, there are indications, that at last, they seem to be getting it right and certainly this book is one of those.

Contact: Compute! Books, Holt Saunders Publishers, 1 St. Anne's Road, Eastbourne, East Sussex, BN21 3UN. Tel: 0323 638 2211.

THE COMPLETE COMMODORE INNER SPACE ANTHOLOGY

by KJH Mildon – £12·95

Yes, the title threw me as well. I first spotted this on the Pitman Publishing stand at the Commodore Show in June and although the title and cover gave no clues as to the contents I picked it up and started browsing. Since I have by nature a tendency towards curiousity (my detractors would call it nosey!), the very inclusion of the magic word 'Commodore' on the outer cover guaranteed that I would look at it. At first I thought it was one of those ghastly kid's learning books from across the Atlantic until the importance of it struck me. I hastily whipped out the cheque book BEFORE even asking the price, a complete reversal of my usual purchasing gambit. The book has apparently only arrived in this country the day before and those manning the Pitman stand were quite unsure of the retail price! A quick phone call to the HQ quickly revealed the price; an even quicker brandishing of the trusty cheque and it was mine.

The book originates in Canada, the source of some of the very best material for Commodore, (it must be a good place, Jim Butterfield resides there!), and it basically consists of pages of tables. These tables contain *ALL* of the information and data you are likely to want to refer to for all Commodore's hardware. In addition to this there are a number of tables which provide solid background information to any useful program. So let's look at these tables.

There are a total of 154 tables and I have appended them below to give you some idea of the contents of this book:–

six-four supplies company

p.o. box 19, whitstable, kent ct5 1tj

THE SIX-FOUR SUPPLIES COMPANY is the premier independent mail-order supplier of specialist products for the Commodore 64 and its successors, notably the new 128 and Amiga. Business and recreational software also available for the IBM-compatible Commodore PC, as well as the Plus-4 and C16. Shop by mail-order in confidence - and experience the personalised service enjoyed by thousands of regular customers worldwide.

COMPARE OUR PRICES! And we'll try to better anything lower on the non-recreational software you see here or in other adverts!

UK POSTAGE (Europe in brackets): 50p(£1) for all orders up to £20 and free for prepaid UK orders over £20; otherwise 75p(£1.50) for orders up to £30, £1(£2) up to £50 and £1.50(£3) over £50. Airmail/freight elsewhere at cost.

PAYMENT: Please make cheques/POs payable to **THE SIX FOUR SUPPLIES COMPANY** or use your Access (MasterCharge) or Visa card. Letters to **PO Box19 Whitstable, Kent** or place your order by 'phone: **(0227) 266289** (24 hour, possible answerphone) or use Compunet Courier ID JPW2. Please note that cheque and credit card payments are not processed until orders are ready for despatch.

WORDPROCESSING

[] Bank Street Writer d62.00 [] Easy Script d65.00 [] Easy Spell UK version d45.00 [] Easy Spell US version d20.00 [] FirstWORD 64 d35.99 [] Heswriter r40.00 [] Homeword d62.00 [] Honeyscript c14.95 [] Letter Writer cd14.99 [] Micro Wordcraft d24.95 [] My Word c14.95 [] Omniwriter d62.00 [] Paperclip d59.50 [] Speedipen d17.50 [] Superscript LIMITED OFFER: d61.95 [] Tasword 64 (80-col) c17.95 d19.95 [] Textpro c9.95 d12.95 [] VizaSpell d65.00 [] VizaWrite d68.00 r85.00 [] VizaWrite + Spell d99.00 [] Vizawrite Classic d+r99.95 [] Word Perfect d17.95 [] Word Writer d44.00 [] Word Wizard c6.99 [] Wordcraft 40 d24.95 SPECIAL: r60.00 [] WordPro3 + Spellright d90.00

OFFICE

[] Figaro 64 d75.00 [] Home Office c14.95 [] Magic Desk r40.00 [] ReportWriter d34.95 [] Stat 64 r29.00 [] SPP (statistics suite) d200.00 [] SPP-Junior d39.00 [] Time/Money Manager d62.00 [] Triangle (wp/data/spr) d19.95 [] VizaStar XL4 r99.00 [] Vizastar XL8 r129.95

BUSINESS

[] Buscom 4 - Stock cd25.50 [] Easy Stock d70.00 [] Gemini Stock Control c19.50 d24.00 [] Stock Aid cd30.00 [] Stock Control (Anagram) d75.00 [] Stock File d27.60

ACCOUNTS

[] Buscom 1 - Monthly Accounts cd25.50 [] Buscom 3 - Retail Accounts cd25.50 [] Future Finance d70.00 [] Gemini Cashbook c57.50 d62.75 [] Gemini Final Accts c57.50 d62.75 [] Gemini VAT File c19.50 d24.00 [] Gemini Cashbook + VAT + Final Accts c87.50 d97.50 [] Invostat cd30.00 [] Payroll-64 d34.95 [] Purchase Ledger c20.00 [] Sales Ledger (Anagram) d75.00 [] Stepping Stones (Superbase) - Cash Book d9.99 - Purchase Daybook d9.99 - Sales Daybook d9.99 [] Transact cd30.00

PERSONAL ACCOUNTS

[] Budgeteer c8.95 [] Checkbook Manager c14.95 [] Dialog Home Accts c14.95 d16.95 [] Electronic C/book cd22.00 [] Gemini Home Accts c19.95 d24.95 [] Home Accountant d66.00 [] Money Manager cd22.00 [] Net Worth d73.00

SPREADSHEETS

[] Busicalc cd17.95 [] Busicalc II d49.00 [] Busicalc III d75.00 [] Calc Result r+d95.00 [] Calc Result Easy r47.50 [] Easy Calc 64 d45.00 [] InstaCalc d57.50 [] InstaCalc Graphic d87.50 [] MicroSwift cd19.95 [] Multiplan d99.00 [] PowerPlan 64 d44.99 [] PractiCalc 64 c35.00 d38.00 [] Practicalc + Practifile d57.50 [] PractiCalc II SPECIAL: d60.00 [] Programmable Spr eadsheet d65.00 [] Swift cd19.95

DATABASES

[] Data Manager II d44.00 [] Database Manager cd21.00 [] Datapro c9.95 d12.95 [] DFM Database cd24.00 d30.00 [] Easy File d45.00 [] FCM (filing/cat/mail) d45.00 [] FileWriter d34.95 [] FirstBASE 64 d35.99 [] Gemini Database c19.50 d24.95 [] Handic Database (+4 progs inc mail) r+d 60.00 [] MegaBase c24.95 [] Micro Magpie d39.95 [] Mirage Database d75.00 [] New Consultant d59.95 [] PFS:File d75.00 [] PractiFile cd39.95 [] Superbase 64 LIMITED OFFER: d69.95 [] Superbase Starter d35.00 [] The Manager d40.00

APPLICATIONS

[] Activity Centre c14.95 [] Advertiser c6.99 [] Diary 64 r19.00 [] Decision Maker c19.95 d24.95 [] Easy Mail d20.00 [] Electronic Address Book d27.50 [] Forecaster c19.95 d24.95 [] Home Inventory c27.50 [] Home Manager cd12.95 [] Homepak d39.95 [] Inventory 64 d27.00 [] Label Printer c6.99 [] Gemini Mail List c19.95 d29.95 [] MenuWriter d28.95 [] Micro Cookbook d30.00 [] PFS:Report (for PFS:File) d65.00 [] Photographs d27.50 [] Poster Printer c6.99 [] Project Planner c19.95 d24.95 [] Recipes d27.50 [] Stamps d27.50 [] Stepping Stones d9.95 (Superbase needed) -Accountants Time Records -Club Membership -Estate Agents -Job Costing -Solicitors Time Records -Stock Records -Travel Agent [] Successful Slimming c8.95 [] SuperType d22.00 c17.95 [] The Model Diet c23.00 [] Type Right CBM c15.75 [] Typing Tutor III d37.50 [] Typing Tutor + Word Invaders cd19.50 [] Quadrillion d14.95

LANGUAGES/EXTENSIONS

[] Acos+ c8.95 [] Bredans BASIC d39.95 [] BC BASIC r57.50 [] C Power Package d119.95 [] FORTH (Handic)(fig) r29.00 [] FORTH+ (Melbourne)(fig) c14.95 [] LOGO (CBM) d34.95 [] Oxford Pascal c22.95 d49.95 [] Pascal 64 (Orpheus) c24.95 [] Pascal 64 (First Publishing) d34.99 [] Pilot (CBM) d24.95 [] Simons BASIC r40.00 [] Simons BASIC Ext d19.95 [] SupaBASIC cd9.99 [] Turbo c14.95 [] Turtle Graphics II r50.00 [] Ultrabasic c14.95 d19.95 [] Ultrabasic 64 d24.95 [] Zoom Pascal d29.95

PROGRAMMING AIDS/UTILITIES

[] 6502 Pro Dev Sys d62.00 [] ADA Training Course d49.99 [] Adventure Construction Set d14.95 [] Adventure Writer d44.95 [] Assembler Dev Pack d24.95 [] Assembler Tutor cd29.95 [] Assembler 64 (CBM) d43.00 [] Basic Lightning c14.95 d19.95 [] Blitz Compiler d47.50 [] Codewriter (prog generator) d87.50 [] Exmon 64 d7.99 [] Fassem c14.95 [] Font Factory d19.95 [] Games Creator c12.95 [] Hesmon r37.50 [] HS-64 Prog Dev System (includes worked examples disk) r55.00 [] Hyperforce cd19.95 [] JetPack Compiler c14.95 d35.00 [] Machine Lightning c29.95 d39.95 [] Master 64 d67.50 [] Mikro Assembler r55.00 [] Mon 64 r39.00 [] Petspeed d50.00 [] Pinball Construction Set d14.95 [] Programmers Utilities d14.95 [] Pulse Assembler c7.00 [] Scope c17.95 [] The Quill c14.95 d19.95 [] Toolkit 64 d11.95 c9.95 [] Victree r55.00 [] White Lightning c19.95 d29.95 [] Zeus 64 c9.95

MUSIC

[] Electrosound c14.95 d17.95 [] Master Composer d37.50 [] Music Construction Set d14.95 [] Music Machine c9.95 [] Music Maker(+keyboard) cd29.95 -Beatles Play Along c9.99 -Pop Classics c9.99 -Pop Play Along c9.99 [] Pro-Synth c14.95 [] Music Master c17.95 d19.95 [] Microvox 230.00 [] Music Studio c14.95 d19.95 [] Musicalc 1 Syn+Seq d41.00 [] Musicalc 2 Score d29.50 [] Musicalc 3 Key Maker d29.50 -Template 1 d21.00 -Template 2 d21.00 [] Sampler (CBM) 69.95 [] Sampler (Supersoft) 230.00 [] Songwriter d36.50 [] Sound Expander (Music Sales) 99.95 [] Sound Studio 14.95 [] Synthy 64 c9.95 [] The Music Studio c14.99 d19.99 [] Ultisynth c14.95

GRAPHICS

[] Art Star c15.95 [] Chartpak d24.95 [] CADpack d35.00 [] Designers Pencil c11.99 d19.95 [] Doodle d14.95 [] GAS Kit c14.95 [] Go Sprite c9.95 [] Graf 64 r29.00 [] Graphics 64 d35.99 [] Graphics BASIC d27.50 [] Graphics Designer d19.95 [] Paintbox c9.95 [] Panorama-H c17.95 c19.95 [] ProSprite c7.50 [] SpriteMaker c6.95 [] Sprite Machine c9.95 [] SuperFont c6.95 [] The Print Shop d42.50 [] The Print Shop Graphics Designer [] d29.95

MISCELLANEOUS

[] 1541 Flash r85.75 [] Azimuth Head Align c8.99 [] Big Mouth c7.95 [] BBC Basic Emulator (Shado) c14.95 [] Disco (tape-disk) c9.95 [] Disk Disector v3.0 d29.95 [] Diskey (disk sector editor +) d36.00 [] Fastback (fast copies) c9.95 [] Fast Load (Epyx) r40.50 [] Freeze Frame r39.95 [] Moviemaker (Reston) d65.00 [] Quickdisk + r19.95 [] Robocom 10 r24.95 [] Robocom 20 r24.95 [] Robocom 30 r29.95 [] Robocom 40 r34.95 [] Robocom 50 r39.95 [] SAM (speech synth) d48.00 [] Super Disk Utility d12.50 [] Taper (tape backup) c9.95

INTERFACES/PERIPHERALS/DISKS

[] Comprint r60.00 [] Centronics priner cable 29.00 [] Compunet SPECIAL:r95.00 [] DAMS IEEE r65.00 [] Disk storage box 2.25 [] JCL IEEE r69.50 [] KoalaPad rdc87.50 [] Printlink cd29.00 [] Quickshot 2 11.95 [] Rel 64 r34.00 [] RS232 Interface r39.00 [] Slik Stick 8.95 [] SuperBox 64 IEEE r65.00 [] Supersketch d50.00 [] Voice Master cd60.00 [] Memorex Disks: SSSD 2-pack 4.96 SSSD 10-pack 24.80 SSDD 2-pack 5.96 SSDD 10-pack 29.80 DSDD 2-pack 6.96 DSDD 10-pack 34.80 DSQS 2-pack 8.96 DSQD 10-pack 44.80

LATEST GAMES

It is impossible to list here the range of recreational software now available for the 64 and many more releases are expected. Try us for the latest releases - or for old favourites you may have trouble obtaining. But one rather special program you won't see at el-cheapo prices is FLIGHT SIMULATOR II (c40.00 d45.00): outstanding! Other US-sourced recreational software also available. Wargames and simulations a speciality. Advance orders taken for new releases:

PLUS-4/C16

Want to supplement or better the on-board software for the Plus-4: The very best available progam for this machine is SUPERBASE (see details in the 64 section) d70.00. Also available for the Plus-4 is COMPANY-PAC 123 for accounts, stock control and invoices. Or go for classy word processing for both the C16 and Plus-4 in the form of WORD PERFECT c12.95. Music fans have MUSIC MASTER c12.95 d14.95. And there's a good graphics package PAINTBOX c9.95. On the games front:

3D Time Trek c6.95 [] Air Combat Emulator c9.95 [] Airwolf c6.95 [] Atomic Mission r11.99 [] Berks c6.95 [] Berks 3 c6.95 [] Blagger c6.95 [] Canoe Slalom c6.95 [] Catacombs c6.95 [] Cave Fighter c6.95 [] Circus c7.95 [] Classic Adventure c5.95 [] Cuthbert In The Tombs Of Doom c6.95 [] Cuthbert In Space c6.95 [] DT's Star Events c7.95 [] Dark Tower c5.95 [] Dork's Dilemma c6.95 [] Escape From Pulsar 7 c7.95 [] Flight Zero One Five c5.95 [] Flightpath 737 c6.95 [] Grandmaster Chess c8.95 [] Gremlins c7.95 [] Harbour Attack c5.99 [] Hulk c7.95 [] Hustler c6.95 [] Jack Attack r14.99 [] Las Vegas c6.95 [] Major Blink c6.95 [] Mansion Adventure c6.95 [] Mayhem c5.99 [] Minipedes c6.95 [] Olympiad c6.95 [] Olympic Skier c5.95 [] Out On A limb c6.95 [] Pacmania c5.95 [] Petals Of Doom c6.95 [] Petch c6.95 [] Pirate Adventure r11.99 [] Pottit c6.95 [] Psychedelia c6.95 [] Purple Turtles c5.99 [] Rig Attack c6.95 [] Roller Kong c5.95 [] Sandcastle & Paramaths c5.99 [] Scramble c6.95 [] Slippery Sid c6.95 [] Sorceror Of Claymorgue Castle c7.95 [] Spiderman c7.95 [] Star Commander c6.95 [] Strange Odyssey r11.99 [] SuperGran c6.95 [] Sword Of Destiny c6.95 [] Ten Little Indians c7.95 [] Time Machine c7.95 [] Torpedo Run c7.95 [] Tower Of Evil c5.95 [] Tycoon Tex c6.95 [] Viduzzles r11.99 [* Way Of The Explodin Fist c9.95 [] Wizard & Princess c5.95 [] Xargon Wars c6.95 [] Zap-Em c6.95 [] Zodiac c6.95 [] Starcross, Zork I, II and III each d11.99 (Plus4 only)

Superbase

Superscript

Super TYPE

SUPERBASE 64 (v2.0) -LIMITED PROMOTION: d69.95

Go on - treat yourself to the one program that ought to accompany any 64, 128 or Plus-4 - SUPERBASE. This is unquestionably the best database management program for these machines, usable for just about any form of information processing - for hobbies or for business purposes. In the latter respect there really is no better alternative. Design your own records to suit the job in hand. Programming facility allows sophisticated inter-file information processing - and much, much more if you've the requirement, to an extent simply not possible with lesser database programs. Information access and processing is faster and the program itself is genuinely much easier to use than others once you've got to grips with it. Excellent tutorial for beginners and advanced users alike. Very easily learnt procedures - plenty of help screens. Database size restricted only by equipment (IEEE drives usable so megabyte files are possible). There's also a pruned down, non-programmable version called SUPERBASE STARTER (£35.00).

SUPERSCRIPT -LIMITED OFFER: d61.95 (save £30!)

The outstanding new wordprocessor for the 64 which includes an extendable 30,000 spell-check facility: choose from either US or UK spellings! Has a very useful five-function calculator feature for column, row or table figure work, and represents state-of-the-art development from its natural predecessors, EasyScript and EasySpell. But much easier to use, and very much more powerful. Links with SUPERBASE for form letters, mailouts etc. Or use data from your own particular spreadsheet or database. In our opinion the best program of its type for the 64 - and we've seen a few! SPECIAL OFFER: SUPERSCRIPT and SUPERBASE £125.00.

Please note that Micro Pro now hold the UK marketing rights for Superscript and the recommended retail price rises to over £90 with immediate effect when our present stocks are exhausted. SO BUY NOW!

SUPERTYPE -d22.00 c17.95

Learn to touch type at your own pace - or simply brush up your technique and increase your speeds using this superb typing tutor. Easy to follow sequence of exercises. Clear progress assessment. The 64 has an excellent QWERTY keyboard that's well suited to many office applications - particularly wordprocessing. So make the most of it by learning to type correctly, in eight to ten hours of your own time, and thus gain a valuable employment skill!

PLEASE NOTE: We won't be beaten on price for the Precision range of products - SUPERBASE, SUPERSCRIPT and SUPERTYPE. Let us know if you manage to find anything lower and we'll better it! Tailor-made Superbase applications can be supplied to your personal or business requirements: these could cost from as little as £50.

PRACTICALC II -SPECIAL d60.00

PRACTICALC II is quite the best spreadsheet for the 64: 80-column entry and display, useful wordprocessing capability, sort, search - the lot. CALC RESULT (r95.00) is an exellent alternative if you can make use of its 32 multiple page overlay facility. For those with existing experience of its use on other micros, there's MULTIPLAN (d99.00), also available in CP/M mode on the 128. SPECIAL OFFERS: PRACTICALC II with SUPERBASE £125.00, PRACTICALC with SUPERSCRIPT £120.00.

ASSEMBLERS

Of the program development tools, JCL's HS-64 Assembler Development System (d+r55.00) and Supersoft's Mikro Assembler (r55.00) are both highly recommended to the advance user. Further details available on these excellent products (SAE please).

LANGUAGES

There's a good selection of programming languages available at various prices: FORTH, C, Pascal, LOGO, Pilot. Please send for details (SAE). Cost apart, particulaly recommended are OXFORD PASCAL, the C POWER PACKAGE (Pitman), and the fig FORTH cartridge from Handic.

EDUCATIONAL SOFTWARE

As a BESA retailer we are well positioned to offer a full selection of educational software for the 64 (and OTHER machines incidentally which are used in schools). Ask for the edsoft catalogue (SAE please) for products from BESA (The British Educational Software Associates), which comprises of software houses such as ASK, Bourne, CalPac, Collins, Ebury, Griffin, Hill MacGibbon, Macmillan, Mirrorsoft and Widgit.

COMMODORE 128

There's a tremendous amount of software available for the 128 quite apart from the vast range of 64 material which can be used in 64-mode. There's a great variety of CP/M software, including the specially formatted software listed below which is to all intents identical with what you might be familiar with on other mini and micro computers (introductory prices here represent discounts of about 20 percent and we will better anything you manage to find lower!). Details on all these products available (SAE please):

[] BASIC Compiler (Microsoft) £450 [] BASIC Interpreter (Microsoft) £340 [] Calcstar (Micro Pro) £99 [] Cobol Compiler (Microsoft) £680 [] Cobol (Ryan McFarlane) £190 [] Datastar (Micro Pro) £175 [] dBase II v2.43 (Ashton-Tate) £395 [] Fortran Compiler (Microsoft) £485 [] Macro Assembler (Microsoft) £195 [] MenuGen £48 [] Multiplan (Microsoft) £159 [] Payroll Package £195 [] Sage Accts £375 [] Sage Accts Plus (inc Invoicing) £695 [] Sort Facility (Microsoft) £190 [] Supercalc II (Sorcim) £195 [] Supersort (Micro Pro) £145 [] SuperCalc I (Sorcim) £126 [] SuperWriter (Sorcim) £250 [] Wordstar Pro v3.3 (Micro Pro) £295 [] Wordstar Mailmerge (Micro Pro) £145 [] Wordstar Spellstar (Micro Pro) £145 [] Wordstar Starindex (Micro Pro) £145 [] Wordstar Pro + Mailmerge + Spellstar + Starindex £399

Full reformatting service available: please write for details.

And then what about what is an outstanding combination for business, personal or club use: SUPERBASE 128 (Offer Price: £85.00) and SUPERSCRIPT 128 (Special Price: £69.95)? Both can be loaded into memory together for true integration, and are usable in 40- or 80-column mode. SPECIAL PRICE FOR THE TWO: £145.00

From Commodore comes a pruned down version of Superbase, and Superscript without its spelling checker - each priced about £50 per unit (please check) - but we strongly recommend you opt for the full versions. And there's the excellent MICROCLERK (d90.00), and also MUSICMAKER (d29.95 including keyboard overlay).

COMMODORE PC and AMIGA

We are able to supply any IBM compatible software for the PC10/20 at very attractive prices. Also, there's a surprising amount of recreational software including games, adventures and simulations. Our provisional list of AMIGA software numbers over fifty items and much of this will be available at the launch.

SPECIAL PACKAGES FOR FURTHER DISCOUNTS

Although much of our software is already discounted, we would like to quote you for your own 'bespoke' software packages composed of non-recreational software of two items or more. The only provision is that the combined normal price exceeds £50. So if there's a particular software combination you'd like :TRY US!..And even if you're unsure and begin by buying only one of the items to start with, we'll keep to our offer price for a month after despatching the first item. And, stocks of Superscript permitting, to our package offers here, which apply for the cover date of this magazine

VISA

0227 266289

SuperCharts
BASIC 2.0/4.0 Superchart
VIC 20, C64 Superchart
True ASCIII Conversion Chart
Binary Conversion Chart
Parity Tables
BCD Conversion Charts

BASIC Section
Commands and Structures
String Function
Arithmetic Functions
Arithmetic Operations
Special Symbols
Hiearchy of Operations
Reserved Variables
BASIC 4.0 Disk Commands
BASIC ROM Memory Allocation
BASIC Text Line Structure
Variable Formats
'FOR' Stack Entry
'GOSUB' Stack Entry
Reserved Variables: ST, DS, DS$
Additional B Series Commands
Additional PLUS/4, C16 Commands
B Series, PLUS/4, C16 Escape Key Sequences

Printer Section
Matrix Printer Control Characters
Matrix Printer Format Characters
Letter Quality Printer Commands
Greek Alphabet Characters

Business Software Section
Wordprocessing Reference Guide
Spreadsheet Commands
PLUS/4 3+1 Software Commands

Machine Language Section
Machine Langauge Monitor Commands
Assembler Commands
CPU Model
Pocket Op-Codes chart
6502 Extra Op-Codes
Hexadecimal Conversion Table
Instruction Set Summary
Instruction Set Descriptions
Addressing Modes
User Callable ROM Routines
BASIC 2.0/4.0 KERNAL Routines
VIC 20, C64 KERNAL Routines
BASIC 2.0/4.0 Error Messages
B Series, PLUS/4, C16 Error Message
BASIC Abbreviations
C64 Super Expander Commands

COMAL Section
VIC 20 RAM, ROM, I/O
Reserved Variables
COMAL Commands
Sprite Commands
Turtle Graphics Commands
COMAL 2.0 Library Descriptions
COMAL 2.0 Memory Map
COMAL 0.14 Memory Map
Keyword Tokens and Entry Points

Memory Maps
BASIC 2.0/4.0 RAM, ROM, I/O
BASIC 2.0/4.0 Zero Page Contents
C64 RAM, ROM, I/O
Vic 20, C64 Zero Page Contents
B Series RAM, ROM, I/O
PLUS/4, C16 RAM, ROM, I/O
4040 Memory Map
8050 Memory Map
1541 Memory Map

Disk Drive Section
Disk Specifications
Directory Header Formats
Directory Sector Formats
Block Availability Map Formats
Sector Recording Formats
Data File Format
PET/CBM Disk Access Routines
Utility Command Set
User Command Jump Table
LED Error Diagnostics
Track/Sector Distribution Table
GCR Codes

Music Section
Music Symbols
Note Frequency Table
Chord Note Derivatives
CB2 Note Values
VIC 20 Note Values
C64 SID Note Values
C64 ADSR Envelope Values
Plus/4, C16 SOUND Values

Video Section
VIC 20 Screen and Border Colours
6845 Video Chip Registers

Telcomputing Section
Network Phone Numbers
CompuServe Commands
CompuServe Category Index
Bulletin Boards by Area Code
Time Zone and Area Code Map
Bulletin Board in Alphabetical Order
Computer Clubs

Hardware Section
Tape Recording Format
Cassette Port
IEEE Standard Definitions
IEEE 488 Bus Signals
IEEE Byte Transfer Sequence
IEEE Cable Connector Pinouts
IEEE Port Pinouts
PET/CBM User Port
6522 Via Registers
C64 User Port
C64 Expansion Port
VIC 20, C64 Keyboard Matrix
VIC 20 I/O Ports
C64 I/O Ports
6520 PIA Registers
6522 VIA Control Registers
6526 CIA Control Registers
C64 Board layout
Resistor Colour codes
Colour Codes
8032 Screen Control Characters
Secondary Address Table
VIC 20 Screen Memory Addresses
VIC 20 Character Base Addresses
C64 Screen Memory
C64 VIC II Chip Addresses
C64 Character Base
Character ROM Contents
Sprite Design
Programmable Character Design
PET/CBM Column Screen Map
VIC 20 Screen and Colour Table Maps
C64 Screen and Colour Table Maps
80 Column Screen Map
B Series 80 Column Screen Map
PLUS/4, C16 Screen and Colour Table Maps
Decimal Page Boundary Addresses
Transistor Lead Assignments
RS-232 and ACIA Control Registers
B Series I/O Ports
Chip Pinouts

Arithmetic and Mathematics
Inch Fractions
International Systems of Units
Names for Large Numbers
Roman Numerals
Constant Values
Boolean Truth Tables
Force Formulea
Mathematical Functions
Trigonometry Rules
Unit to Unit Conversion Tables
Geometric Areas and Volumes
Periodic Table of Elements

Well, after you have feasted your eyes on that lot you can appreciate just how invaluable this book is. Irrespective of which machine or disk drive that you own and operate, everything that you could ask is in one place.

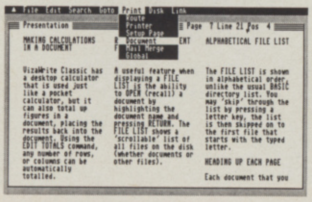
The section which I found particularly useful was that on music chord derivatives, just try finding that in a music text book! Having just acquired a PLUS/4, the sections and tables relevant to this machine were much more accessible than those contained in the User Guide supplied with the machine. Indeed, the word accessible is an apt description for this book: it gathers and makes most of the currently published information on Commodore machines into one easily assimilated form.

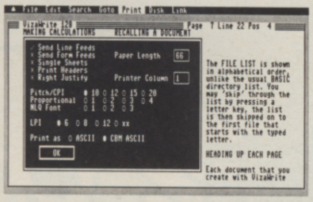
Some of the contents do not have any relevance in the UK, the Telecomputing Section for instance. However, by and large this book fulfils a huge need for basic information *in one place*. I hope that the publishers will update this book with the addition of the new and forthcoming machines, viz. C128, 900 Series and the fabulous AMIGA. Although I think in the case of the AMIGA it will probably require several volumes to cover ITS features. Look out for this book, it is a worthy addition to your shelf.

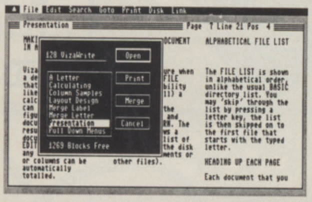
Contact: Pitman Publishing, 128 Long Acre, London WC2E 9AN. Tel: 01-379 7383.

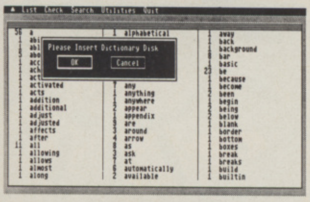
£99·95
including VAT

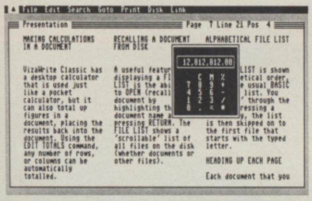
VIZAWRITE
PERSONAL WORD PROCESSOR
Classic 128


```
▲ File Edit Search Goto Print Disk Link
  Presentation              Route       Page  7 Line 21 Pos  4
                            Printer
                            Setup Page
  MAKING CALCULATIONS     R Document    ENT   ALPHABETICAL FILE LIST
  IN A DOCUMENT           F Mail Merge
                            Global

  VizaWrite Classic has   A useful feature when   The FILE LIST is shown
  a desktop calculator    displaying a FILE       in alphabetical order,
  that is used just       LIST is the ability     unlike the usual BASIC
  like a pocket           to OPEN (recall) a      directory list. You
  calculator, but it      document by             may 'skip' through the
  can also total up       highlighting the        list by pressing a
  figures in a            document name and       letter key, the list
  document, placing the   pressing RETURN. The    is then skipped on to
  results back into the   FILE LIST shows a       the first file that
  document. Using the     'scrollable' list of    starts with the typed
  EDIT TOTALS command,    all files on the disk   letter.
  any number of rows,     (whether documents or
  or columns can be       other files).           HEADING UP EACH PAGE
  automatically
  totalled.                                       Each document that you
```


```
▲ File Edit Search Goto Print Disk Link
  VizaWrite 128                              Page  7 Line 22 Pos  4
  MAKING CALCULATIONS     RECALLING A DOCUMENT
   ✓ Send Line Feeds
   × Send Form Feeds      Paper Length   [66]
   × Single Sheets                              The FILE LIST is shown
   × Print Headers                              in alphabetical order,
   × Right Justify        Printer Column [1 ]   unlike the usual BASIC
                                                directory list. You
   Pitch/CPI     ● 10 ○ 12 ○ 15 ○ 20            may 'skip' through the
   Proportional  ○ 1  ○ 2  ○ 3  ○ 4             list by pressing a
   NLQ Font      ○ 1  ○ 2  ○ 3                  letter key, the list
                                                is then skipped on to
   LPI    ● 6  ○ 8  ○ 12 ○ xx                   the first file that
                                                starts with the typed
   Print as  ○ ASCII  ● CBM ASCII               letter.
     [ OK ]
                                                HEADING UP EACH PAGE

                                                Each document that you
                                                create with VizaWrite
```


```
▲ File Edit Search Goto Print Disk Link
  Presentation                               Page  7 Line 21 Pos  4
  MAKI                                 OCUMENT   ALPHABETICAL FILE LIST
  IN A   128 VizaWrite      [ Open ]

  Viza   A Letter           [ Print ]  ure when  The FILE LIST is shown
  a de   Calculating                   FILE      in alphabetical order,
  that   Column Samples                bility    unlike the usual BASIC
  like   Layout Design      [ Merge ]  ll) a     directory list. You
  calc   Merge Label                             may 'skip' through the
  can    Merge Letter                  the       list by pressing a
  figu   Presentation       [ Cancel ]  and      letter key, the list
  docu   Pull Down Menus               RN. The   is then skipped on to
  resu                                 ws a      the first file that
  docu   1269 Blocks Free              list of   starts with the typed
  EDIT                                 the disk  letter.
  any                                  ments or
  or columns can be       other files).          HEADING UP EACH PAGE
  automatically
  totalled.                                      Each document that you
```


```
▲ List Check Search Utilities Quit
  56  a                    |  1  alphabetical    |  1  away
   1  abi                                           1  back
   1  abl   Please Insert Dictionary Disk           1  background
   5  abo                                           8  bar
   1  acc     [ OK ]      [ Cancel ]                1  basic
   1  ach                                          23  be
   1  act                                           1  because
   1  activated            |  7  any             |  1  become
   1  acts                 |  1  anything        |  2  been
   1  addition             |  1  anywhere        |  1  begin
   1  additional           |  2  appear          |  2  being
   1  adjust               |  1  appendix        |  2  below
   1  adjusted             |  9  are             |  1  blank
   1  affects              |  3  around          |  1  border
   1  after                |  4  arrow           |  1  bottom
  11  all                  |  8  as              |  1  boxes
   1  allowing             |  3  ask             |  1  break
   1  allows               |  7  at              |  1  breaks
   1  almost               |  6  automatically   |  1  build
   1  along                |  2  available       |  1  builtin
```


```
▲ File Edit Search Goto Print Disk Link
  Presentation                               Page  7 Line 21 Pos  4
  MAKING CALCULATIONS     RECALLING A DOCUMENT   ALPHABETICAL FILE LIST
  IN A DOCUMENT           FROM DISK
                                    [12,812,812.00]
  VizaWrite Classic has   A useful featur  C M %  LIST is shown
  a desktop calculator    displaying a FI 7 8 9 +  etical order,
  that is used just       LIST is the abi 4 5 6 -  e usual BASIC
  like a pocket           to OPEN (recall 1 2 3 /   list. You
  calculator, but it      document by     0 . = *  ' through the
  can also total up       highlighting th          ressing a
  figures in a            document name a          y, the list
  document, placing the   pressing RETURN. The   is then skipped on to
  results back into the   FILE LIST shows a      the first file that
  document. Using the     'scrollable' list of   starts with the typed
  EDIT TOTALS command,    all files on the disk  letter.
  any number of rows,     (whether documents or
  or columns can be       other files).          HEADING UP EACH PAGE
  automatically
  totalled.                                      Each document that you
```

VizaWrite Classic is a high performance, easy-to-use word processing program designed for the Commodore 128 computer.

VizaWrite Classic takes full advantage of the colour, graphics and memory capabilities of the Commodore. Creating the full power and style of a dedicated word processing station, without the expense.

Serious word processor users expect their document to be formatted as they type, into pages. VizaWrite Classic does this instantly. No preview is necessary–tabs, indents, centering and text columns are always in-view.

Clearly presented and easily altered.

VizaWrite Classic is the successor to the VizaWrite word processor for Commodore computers.

VizaWrite Classic includes word processing features that improve all aspects of document preparation and printing.

Full 'newspaper-style' columns, high resolution dot-matrix printer fonts and true proportionally spaced printing mean high quality presentation.

A phrase glossary, full function calculator and integrated spelling checker mean fast and reliable document content. And much more.

VizaWrite Classic, an easy-to-use word processor with Classic features.

Editing

- *Copy, move and delete text by highlighting. Highlight by character, word, sentence, paragraph, page or searching.*
- *Full screen and document scrolling, up to 240 character page width.*
- *Find and replace any sequence of characters.*
- *Go to any page, instantly.*
- *Merge almost any other word processing file directly into a document–including Easy Script, Superscript, Paper Clip and Omniwriter.*
- *Glossary area, for quick insertion of frequently used phrases into a document.*
- *Full function calculator. Add, subtract, divide and multiply–directly or using figures in a document.*

Formatting

- *Page-based 'What You See Is What You Get'–word wraps and formats text, instantly, as you type. Alterations to layout are quick, easy and immediate.*
- *Format lines are used to set margins, tab stops, indentation and column drops.*
- *Simple to remember format symbols for tabs, indents and column processing.*
- *Automatic paragraph indentation, numerical tabbing, right alignment and centering.*
- *True 'newspaper style' columns, with variable width control, plus full editing and printing features.*
- *Format and file compatible with VIZAWRITE 64 and OMNIWRITER.*
- *For use with 80-column colour or monochrome monitors, with full colour control. Runs in 128 FAST mode.*

Printing

- *Multi-line headings and footings with automatic page numbering.*
- *Multiple and collated print copies.*
- *Mail-Merge simply and selectively, print up to 4-across labels with ease and speed.*
- *Mail Merge can also include information from VIZASTAR database files.*
- *As well as CBM printers, VizaWrite supports virtually any parallel or RS232 connected printer including EPSON, STAR, JUKI, BROTHER and SPINWRITER.*
- *Proportional character printing on JUKI, BROTHER and other 'DIABLO compatible' daisy wheel printers.*
- *Built-in proportionally spaced 'Near Letter Quality' fonts for use on dot-matrix printers, CBM, EPSON, and compatibles.*

Plus Integrated 30,000 Word Spelling Checker

VIZA
SOFTWARE

Order now, or fill in the coupon for more details.

VIZA SOFTWARE LTD.
Chatham House, 14 New Road,
Chatham, Kent ME4 4QR.
Telephone: (0634) 45002.

VIZAWRITE
PERSONAL WORD PROCESSOR
Classic
VIZA

Please send me further details about VIZAWRITE CLASSIC for the Commodore 128

Name ____________________

Company ____________________

Address ____________________

____

Tel. ____________________ *CCI/***12**

SCARABAEUS

SALLIE THE SCARAB

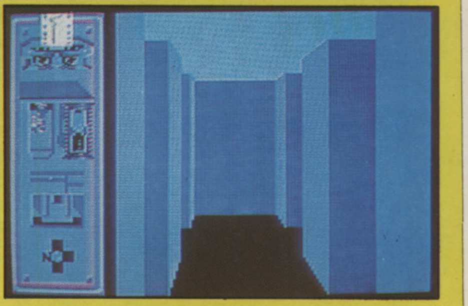
SCARABAEUS

Andromeda are a Hungarian software house who, for a while, have been writing relatively good games, but with this lastest release from Ariolasoft they have excelled themselves — all the way from the excellent hi-res loading screen (with very cute dog), to the lovely smooth movement and catchy theme tunes.

Scarabaeus is not an exceptionally original game, in fact its origins can be traced all the way back to some very early Apple II games. However, Andromeda have added so many new and differing sections to this 3-D maze game that it is one of the best releases this month.

The games objective is to travel through various mazes collecting more an more items to complete your nine-sectored collector. When chasing around the maze you must use your map (pull the joystick back) to help you find the horned Minotaur.

Having started playing the game it at first seems easy, with nothing to threaten you, but later on you have spiders that you must lose in the maze, and other evil objects whose sole point seems to be to make your life difficult. Your Puppy does help you by warning you of any imminent encounters, but this is usually too late anyway!

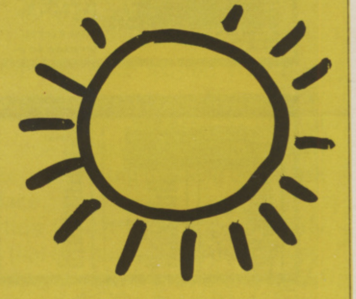


Scarabeus is full of little touches which add to the game; if you turn the music off you hear your breathing and heartbeat pounding in the background, increasing and decreasing as you go through the game.

Overall, Scarabaeus is a game I would recommend to anyone who likes graphics, as it's one of those games that cannot fail to impress.

Fast Loader: Yes
Graphics: ****
Sound: ****
Playability: ****
CCI Rating: ****
Price: £9.95 cassette
Contact: Ariolasoft, Asphalte House, Palace Street, London SW1. Tel: 01-834 8507.

Decision in the DESERT



"YOU are in Command — North Africa 1940-42!", or so I was lead to believe when I first picked up the manual that goes with the latest war simulation from Microprose.

It puts you in control of all the many small armies in the African desert, and you must, with your 'Desert Rats' defeat Rommel — the 'Desert Fox'!

All the important battles of these campaigns are included, with a very nice 'what if?' feature which leads to some very unusual endings. El Alamein, Alam Halfa, and Galaza, they're all there and, as far as I can tell, accurately portrayed.

The loading title plays some nice music (although quite what 'It's a long way to Tipperary' has to do with the desert I fail to see!). Apart from that both the graphics and the sound leave a lot to the imagination, the small and difficult to determine graphics do mean that it takes quite a while to determine who is doing what.

The games options are based on moving, defending and attacking, dependant on your situation. If for example Rommel has you cornered, it's no good just running; you must bring reinforcements — and fast!

I found the game a litte difficult to get into, but as I am not an avid wargamer this is not surprising. **If you enjoy this type of game I have no doubt this is immensely playable, but it's also long!**

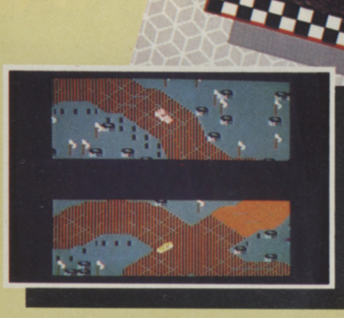
Fast Loader: Disk
Graphics: ***
Sound: ***
Playability: ***
CCI Rating: ***
Price: £14.95 disk
Contact: US Gold, Unit 10, Parkway Industrial Estate, Heneage Street, Birmingham B7 4LY. Tel: 021-359 3020.

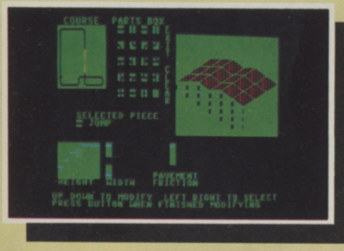
ALEX OR BUST

Racing Destruction Set™

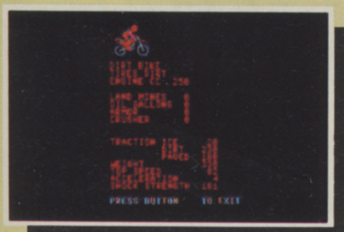
NOW AVAILABLE ON CASSETTE FOR YOUR CBM 64

Racing Destruction Set
from Electronic Arts
25
STYLER
COMMODORE 64
128 Compatible
A Thrilling Action Racing Program
U.S. TOP HIT
CASSETTE




COURSE
PARTS BOX
EXIT
CLEAR
SELECTED PIECE
= JUMP
HEIGHT
WIDTH
PAVEMENT
FRICTION

UP DOWN TO MODIFY LEFT RIGHT TO SELECT
PRESS BUTTON WHEN FINISHED MODIFYING


DIRT BIKE
TIRES DIRT
ENGINE CC 250
LAND MINES
OIL GALLONS
ARMOR
CRUSHER
TRACTION ICE
DIRT
PAVED
WEIGHT
TOP SPEED
ACCELERATION
SHOCK STRENGTH 101

PRESS BUTTON TO EXIT

A new and exciting, split screen, computer slot car racing set for 2 players.

- ▶ ***50 different built-in tracks with editor***
- ▶ ***10 different vehicles** (each Customizeable)*
- ▶ ***14 Gravity settings** (e.g.: Moon, Earth and Jupiter)*
- ▶ ***4 completely different background scenarios***
- ▶ ***Design and build your own deadly tracks***
- ▶ ***Grand Prix, Motocross, Roadrace, Dirt and Test track surfaces***
- ▶ ***Ram your opponents using your Crusher capability***
- ▶ ***Drop land mines and oil slicks behind you***
- ▶ ***Split screen racing showing BOTH cars together when neck and neck***
- ▶ ***Play the computer or a friend***

Available from all good software retailers – if its not there, please order it – or in case of difficulty send your crossed cheque/P.O. made out to ***Ariolasoft U.K. Ltd.,*** including your own name and address, to Ariolasoft U.K. Ltd., Suite 105/106, Asphalte House, Palace Street, London SW1E 5HS.

▶ ***RACING DESTRUCTION SET –*** Commodore 64 Twin Pack cassette – ***£12·95*** Commodore 64 disk – ***£14·95***.

(Please allow 28 days from release for delivery)

ariolasoft
HIGH PERFORMANCE PROGRAMS

001...

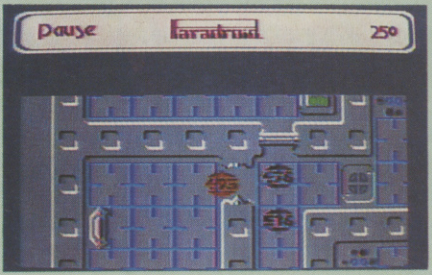
PARADROID

At first glance Paradroid seemed to be a game with little to show for itself save some pretty graphics and some very smooth scrolling, and these days that is not enough to guarantee good reviews or any degree of success.

It seemed unlikely, however, that Hewson Consultants – a company with a respected name – would release a product of anything less than high quality, so I persevered. Having managed to work out roughly what to do, I became intrigued with the **outstanding originality and excellent gameplay and scenario.** Writing this review was the only thing capable of dragging me from the game. (Too true! – Ed).

Paradroid places you as an influence device droid, a special type of robot which on its own is not powerful, but when controlled by you has a chance to defeat all other robots. At the start of a game your droids level is 001, or in other words very weak. To increase your level you must overpower other droids of higher levels and transfer into their bodies. Having done this you become more powerful. Unfortunately however you can only stay a certain length of time in each shell before you must transfer again.

If this all sounds too complicated, suffice to say that you must kill everything on every level to complete each section, and it's a damn sight easier if you control a droid whose level is 999, than one on 150!



Overall I found the game **unusual, challenging, and (although it has become a real cliche), addictive.**

Fast Loader: Yes.
Graphics: ****
Sound: ***
Playability: *****
CCI Rating: ****
Price: £7.95
Contact: Hewson Consultants Ltd, Hewson House, 56B Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX. Tel: 0235 832939.

Paradroid ...999

Glug... Glug... Glu...

BLACKWYCHE

Blackwyche, or the further adventures of Sir Arthur Pendragon, is the latest in the ever lengthening line of games by Ultimate for the 64. Having enjoyed the other two Pendragon games, Staff of Karnath and Entombed, I looked forward to the extra challenges of Blackwyche.

In this game you must guide Sir Arthur around a deserted ghost ship, collecting vital pieces of information and objects to help you find the now dead captains' soul.

One very nice touch from Ultimate is the inclusion of a tape head cleaner, with the game, in a twin tape package. I am sure this will mean many less returns, and save them money in the long run.

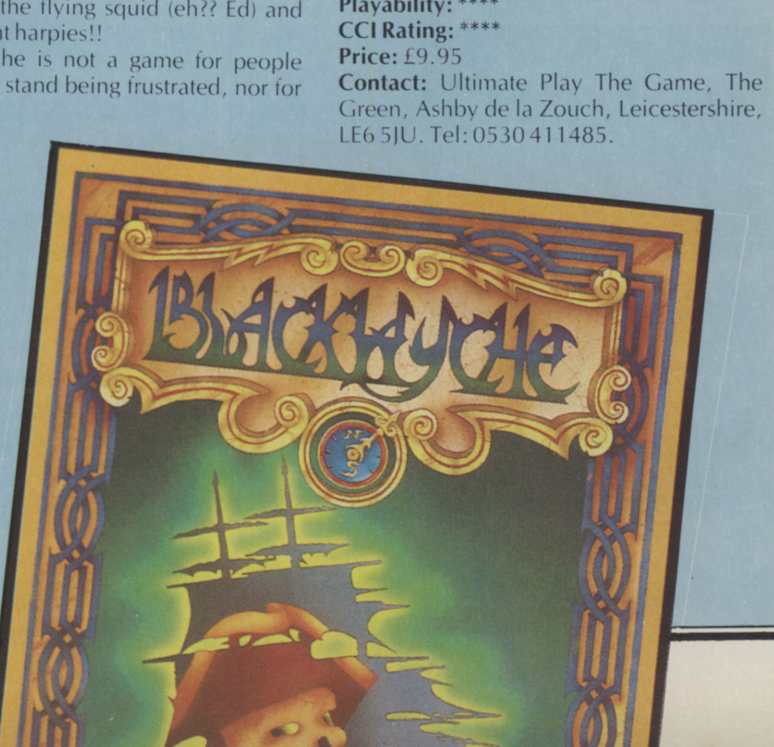
Graphically the game is to their usual high standard, with some beautiful interiors of the ship, complete with floorboards, tables, and other important items. Sir Arthur is nattily dressed in a Draculaesque cloak, and although he moves around in no hurry, his movement is both sensitive and positive.

The sound too was good, with a nice little sea shanty to put you in the mood for the start of your adventure.

I found that, as with most detailed graphical adventures, the only way to guarantee success is to map out the game. This I did relatively completely, but I still can't quite beat the game – if only it weren't for the flying squid (eh?? Ed) and the persistant harpies!!

Blackwyche is not a game for people who cannot stand being frustrated, nor for people who want a thoughtless shoot-em-up, **it requires dedication, patience, and more than a little skill.** If you're a fan of Ultimate games anyway, this won't disappoint you, and if not – you should be!!!

Fast Loader: Novaload
Graphics: ****
Sound: ****
Playability: ****
CCI Rating: ****
Price: £9.95
Contact: Ultimate Play The Game, The Green, Ashby de la Zouch, Leicestershire, LE6 5JU. Tel: 0530 411485.



DIMENSION computers l.t.d.

27/29 High Street
Leicester LE1 4FP
Tel: (0533) 57479

THE MIDLAND'S LARGEST HOME COMPUTER STORE

COMMODORE SOFTWARE OFFERS

PRECISION SUPERSCRIPT 64	~~£79.95~~	£49.95
PRECISION SUPERBASE 64	~~£99.95~~	£59.95
SUPERSCRIPT 64 + SUPERBASE 64	~~£169.95~~	£99.95
PRECISION SUPERSCRIPT 128	~~£79.95~~	£59.95
PRECISION SUPERBASE 128	~~£99.95~~	£74.95
SUPERSCRIPT 128 + SUPERBASE 128	~~£179.90~~	£124.90
COMMODORE LOGO + PILOT	~~£79.95~~	£14.95
Handic Easy Calc (Spreadsheet) — Cartridge	~~£49.95~~	£14.95
Handic Calc Result (3D Spreadsheet) — Disc & Cartridge	~~£99.95~~	£39.95
Handic Diary — Cartridge	~~£29.95~~	£ 9.95
Practicorp Practicalc (Spreadsheet) — Cassette	~~£39.95~~	£14.95
Practicorp Practicalc (Spreadsheet) — Disc	~~£44.50~~	£17.95
Audiogenic Wordcraft 40 (Wordprocessor) — Cartridge	~~£89.95~~	£24.95
Commodore Easyspell (Spellcheck for Easyscript) — Disc	~~£50.00~~	£19.95
BOX 10 SS/SD COMMODORE COMPATIBLE DISCS		£15.00

To order, either send cheque/PO with coupon or ring **(0533) 57479/21874** with Access/Barclaycard number. Please add £1.00 towards carriage & packing on any software order, and £5.00 carriage on hardware orders.

Send to Dept. CC112, Dimension Computers Ltd.,
27/29 High Street, Leicester LE1 4FP.

ITEM	QUANTITY	PRICE
....		....
....		....
....		....
....		....
	TOTAL	

Name ....
Address ....
....
Telephone: ....
PLEASE ALLOW 7 DAYS FOR DELIVERY

COMMODORE HARDWARE OFFERS

1541 DISC DRIVE + MPS 801 PRINTER	£199.95
COMMODORE 64 + DISC DRIVE + SUPER ZAXXON AND ULTIMA III	£299.95
COMMODORE 64 DISC DRIVE	£129.95
MPS 801 PRINTER	£ 99.95
COMMODORE 64 GREEN SCREEN MONITOR	£ 99.95
FERGUSON 64 AMBER SCREEN MONITOR	£ 99.95
COMMODORE 128 GREEN SCREEN MONITOR	£ 99.95
FERGUSON 128 AMBER SCREEN MONITOR	£ 99.95
COMMODORE 128	£269.95
COMMODORE 1570 DISC DRIVE	£199.95
COMMODORE 128 + 1570 DISC DRIVE	£449.95
STAR SG10C PRINTER + SUPERSCRIPT 64	£299.95
DPS 1101 PRINTER + SUPERSCRIPT 64	£239.95
COMMODORE COMPENDIUM PACK INCLUDING: COMMODORE 64, DATA RECORDER, MUSIC MAKER KEYBOARD, DESIGNERS PENCIL, ADRIAN MOLE GAME + BOOK	£199.95
COMMODORE COMPATIBLE DATA RECORDER	£ 27.95

COMMODORE EQUIPMENT REPAIRS

PLEASE RING FOR FULL DETAILS OF OUR COMPREHENSIVE REPAIR SERVICE.

POOLSWINNER

THE ULTIMATE POOLS PREDICTION PROGRAM

POOLSWINNER
selec

Boxed, with detailed instruction booklet

- **MASSIVE DATABASE** Poolswinner is a sophisticated Pools prediction aid. It comes complete with the largest database available – 22000 matches over 10 years. The database updates automatically as results come in.
- **PREDICTS** Not just SCOREDRAWS, but AWAYS, HOMES and NO SCORES.
- **SUCCESSFUL** SELEC guarantee that Poolswinner performs significantly better than chance.
- **ADAPTABLE** Probabilities are given on every fixture – choose as many selections as you need for your bet. The precise prediction formula can be set by the user – you can develop and test your own unique method.
- **SIMPLE DATA ENTRY** All team names are in the program. Simply type in the reference numbers from the screen. Or use FIXGEN to produce fixture list automatically (see below).
- **DISC/MICRODRIVE COMPATIBLE** Tapes supplied with conversion instructions.
- **PRINTER SUPPORT** Full hard copy printout of data if you have a printer.

AVAILABLE FOR Spectrum (48K), Commodore 64, VIC 20 (+16K), AMSTRAD, BBC B, Atari (48K), ZX81 (16K), Dragon, Apple II, ELECTRON

PRICE £15.00 (all inclusive)

NOW AVAILABLE

FIXGEN 85/6

AT LAST: No more struggling for hours to get the fixture list into the computer. FIXGEN has been programmed with all English and Scottish fixtures for 1985/6. Simply type in the date, and the full fixture list is generated in seconds. Fully compatible with Poolswinner.

POOLSWINNER with FIXGEN £16.50 (all inclusive)

COURSEWINNER
selec

COURSEWINNER V3

THE PUNTERS COMPUTER PROGRAM

NOT JUST A TIPSTER PROGRAM, Coursewinner V3 can be used by experts and occasional punters alike.

You can develop and test your own unique winning system by adjusting the analysis formula, or use the program in simple mode. Coursewinner V3 uses statistical analysis of major factors including past form, speed ratings, course statistics, prize money, weight, going, trainer and jockey form etc, etc. It outputs most likely winners, good long odds bets, forecasts, tricasts etc. The database includes vital course statistics for all British courses. You can update the database – never goes out of date.

AVAILABLE FOR Spectrum (48K), Commodore 64, BBC (B), AMSTRAD, Atari (48K), Apple II

PRICE £15.00 (all inclusive) includes Flat AND National Hunt versions.

Send Cheques/POs for return of post service to . . .

VISA phone 24 hrs

selec SOFTWARE

Access phone 24 hrs

37 COUNCILLOR LANE, CHEADLE, CHESHIRE. ☎ 061-428 7425

(Send for full list of our software)

FOR THE COMMODORE 64 & 128

CHARTPAK-64 – Produces hi-res and graphs in any of 8 different formats. Data can be entered from keyboard or from Busicalc I, Multiplan or DIF files. Output to a wide range of printers. **£24.95 (on disk)**
VIDEOBASIC-64 – Development package adds more than 50 BASIC commands including hires, multicolor, sprite and turtle graphics, sound, memory management and more. Hardcopy to a wide range of printers. Runtime version of programs can be distributed free of royalties. Price reduced to **£34.95 (on disk)**
PASCAL-64 – A full compiler producing fast 6502 code. Compiled programs run independently. Extensions for hires graphics, sprites, and interrupt routines. **£34.95 (on disk)**
ANATOMY OF THE 1541 DISK DRIVE BOOK – Packed with information including complete ROM listing and several useful utility programs. **Now only £8.95.**

FOR THE VIC-20

Ten top quality games on one disk for only £9.95. Games on tape from **£1.99.** VIGIL — powerful games language including 75 page manual and 9 games for **£7.50 (disk £9.00).**

FOR THE COMMODORE-16 & PLUS 4

Our catalogue lists over 100 games, books and utility programs. Generous discounts.

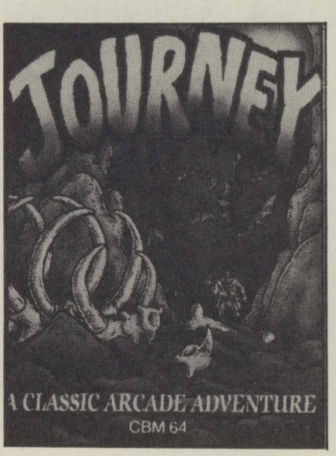
Send stamp or sae for full catalogue (state computer).

ADAMSOFT
18 Norwich Avenue
Rochdale, Lancs. OL11 5JZ

CRL GO OZI

CRL, the company behind such new titles as Blade Runner (see preview p.17) has just announced that it will be releasing Ozisoft's latest title, Journey. Written for the Commodore 64, it features music based on the Madness single "House of Fun". The graphics are neat, and the music is quite catchy, but it arrived in the office a few days too late. Look forward to a full review next issue.

Contact: CRL, CRL House, 9 Kings Yard, Carpenter's Road, London E15 2HD. Tel: 01-533 2918.



CRITICAL GAME

Durell Software, a small but well-known games house, has just announced the details of its latest release, Critical Mass. From the graphics I have seen it looks really excellent, with some realistic 3-D graphics and some lovely shading.

In the game, you are equipped with a low level strike craft, you must travel as fast as possible towards the power plant and destroy the anti-matter converter.

The movement is fast and controlled in Asteroid style: rotate left, rotate right, faster, slower, fire. The complex scoring sheet shows both the number and type of Aliens shot down (there are six different classes of aliens). You have only one life, but you can make this last by using replacement strike craft (of which there are only a limited amount). There are seven different zones to fight your way through, and it should prove pretty challenging! Look out for a review next month.

Contact: Durell Software, Castle Lodge, Castle Green, Taunton, Somerset TA1 4AB. Tel: 0823 54489.

CRITICAL MASS
(C) DURELL SOFTWARE 1985
PROGRAMMING-S.FRANCIS
GRAPHICS-D.CUMMINGS

ANOTHER COUNTRY

English Software, an originally Atari concern, look set to release Elektraglide – a new racing game for the 64. Before you turn over, it's got some pretty interesting new features that theoretically should make it a winner – a track that splits into two, real tunnels, and detailed signposts. All this and more is promised, and I should have a review within the next two months.

Contact: English Software Company, 3rd Floor, 1 North Parade, Pasonage Gardens, Manchester M60 1BX. Tel: 061-835 1958.

COMPUTERISED CHRISTMAS CARDS (??)

For £2.99 you can send a friend, a loved one, or indeed a complete wally a Computerised Christmas card, care of Virgin Games. The program cycles through an animated sequence and is accompanied by various seasonal tunes. As its only October as I write, I haven't loaded it yet, but I can guess what it will be like. On the other side however, you get a free copy of Ambush, so maybe it's worth it.

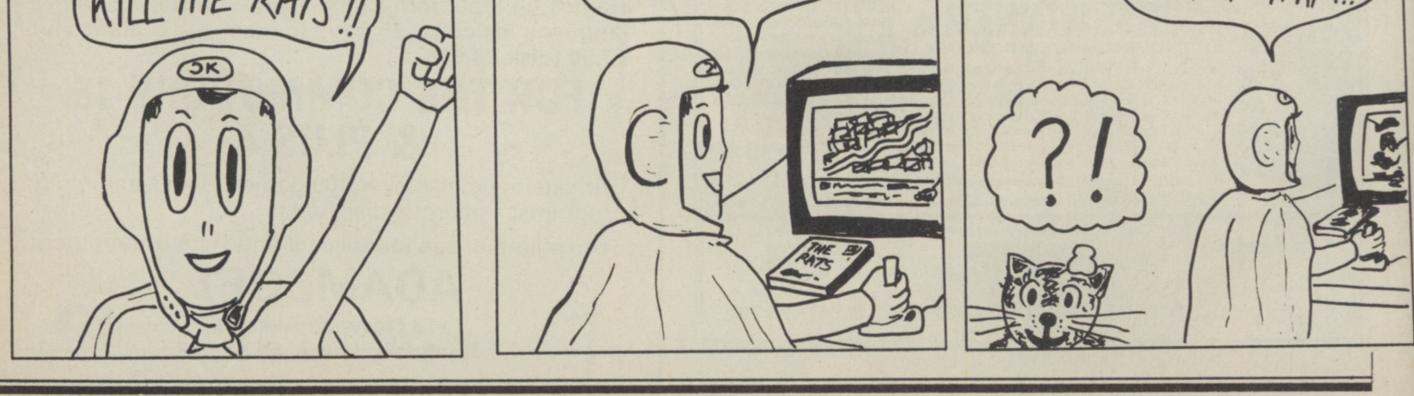
Contact: Virgin Games Ltd, 2-4 Vernon Yard, 119 Portobello Road, London W11 2DX. Tel: 01-727 8070.

YOU LUCKY, LUCKY BUGGER!

Andrew Boosey of Hayes, Middlesex has not got a bank balance into four figures. Mirrorsoft, the software house who produced Games Creator, gave Andrew £1000 for his game, Pony Express, which is designed using the Creator. All I can say is that it makes me sick!

While we're on the subject of Mirrorsoft, they are soon due to release Dynamite Dan, their Spectrum hit, on the 64, and from the reviews the Spectrum version got, I look forward to seeing the 64 version very soon. Look out for a review in one of the next two issues.

Contact: Mirrorsoft, Maxwell House, 74 Worship Street, London EC2A 2EN. Tel: 01-377 4600.


The Commodire Kid
by Max
KILL THE RATS!!
CK
I HAVE POWER OVER OVER THE RAT RACE!!
THE BY RATS
IT'S A TRAP! A RAT-TRAP...
?!

THREE INTO TWO WILL GO!

Or more precisely four £2.50 games will go into £7.50, according to Creative Sparks, who have just released a compilation tape of their previously successful budget games.

The first tape consists of Slurpy, a food dedicated game (eh Ed), Or Attack, in which (surprise, surprise) you must repell hordes of awful Orcs from attacking your castle. You have Oil and Stones, but your life is still not easy!

Black Hawk, is an action/strategy game involving you flying the worlds deadliest plane.

Finally there is River Rescue – using a powerboat, and avoiding all the enemy helicopters and mines, you must save a team of scientists.

These games are all pretty good and at four for £7.50 you can't really go wrong, but don't take my word for it, play them!

Contact: Thorn EMI Computer Software, Thompson House, 296 Farnborough Road, Farnborough, Hampshire GU14 7NF. Tel: 0252 543333.

NEW COLOSSUS

The long-awaited version of Colossus Chess – 4.0, has just been released by CDS. It has a "perfect" understanding of all the rules of chess, including many of the more diverse rules. Colossus also has a 3-D option, joystick control and a second screen giving many useful insights into the programme.

In tests Colussus 4.0 beat many other comparable programs including the very respected My Chess 2.0 on the 64, and the even better White Knight II on the BBC 'B'.

Contact: CDS Group Ltd, Silver House, Silver Street, Doncaster, South Yorkshire DN1 1HL. Tel: 0302 21134.

KNIGHTSOFT AND THE REVOLUTION

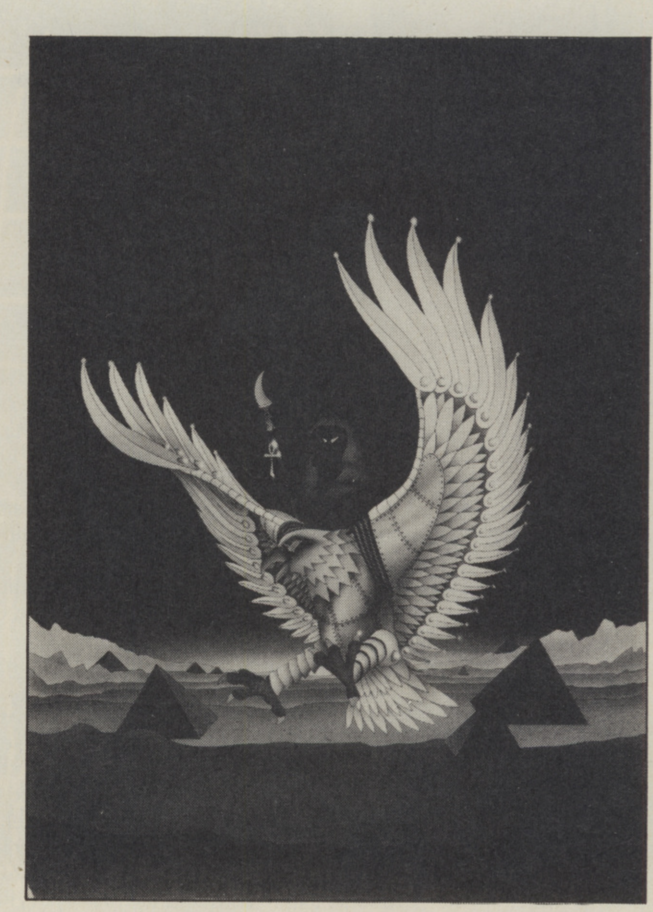
Knightsoft have just announced "a completely new concept in computer games". It is an animated graphical adventure, and if the claims are anything to go by, it should really be worth the wait. It's soundtrack was produced by a contemporary rock band called "Bamm-Boo", and according to Knightsoft the soundtrack will be a hit single. More details will follow soon, and all of us are eager to see the game, to say the least!

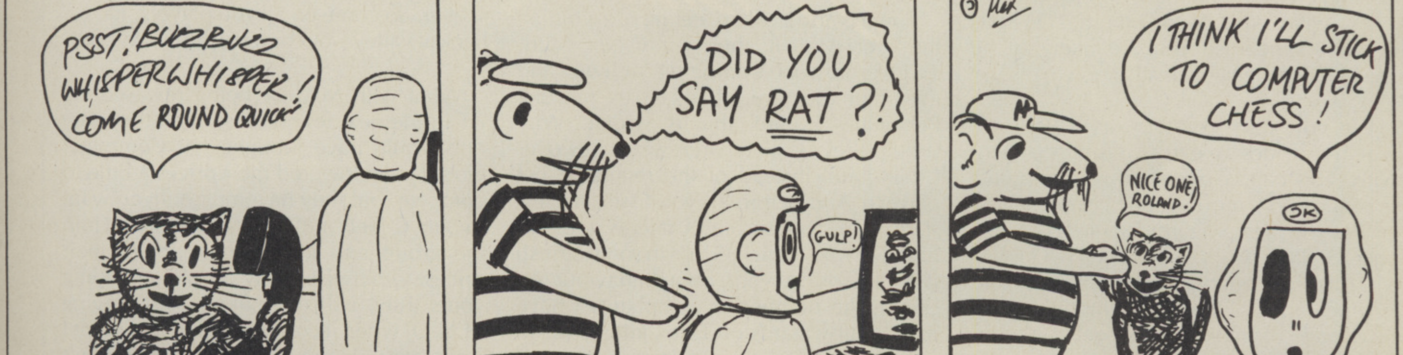
Contact: Knightsoft, The Round Table, 87 Brunswick Street, Burnley, Lancashire BB11 3LE. Tel: 0282 414151.

IMHOTEP – THE ULTIMATE?

Imhotep is the soon to be released new title from Ultimate. Not much news about it is available, but the artwork is really great as you can see!

Contact: Ultimate Play the Game, The Green, Ashby de la Zouch, Leicestershire, LE6 6JU. Tel: 0530 411485.




PSST! BUZZBUZZ WHISPERWHISPER! COME ROUND QUICK!
DID YOU SAY RAT?!
GULP!
I THINK I'LL STICK TO COMPUTER CHESS!
NICE ONE ROLAND!

In this month's M.U.D column, CCI is pleased to welcome A Wizard who voices his view on the current M.U.D situation

Before we start, let's get one thing straight. I am NOT Jez! Jez is Zaphod on Essex. I am Zaphod on Compunet. Please don't get us confused!

As most people now know, MUD is available via Compunet. What many people do not know is that it can be accessed via an external link, ie, it can be played without having to go through Compunet. This means that you do not even have to be a C-Net member. If you wish to do this please contact Compunet any time from 9.30am to 9.30pm (hard-working souls they are!) on: 01-637-9042, and they will send you the relevant information.

Anyway, enough plugging! On with the article . . .

Over the last few weeks quite a few things have been happening on C-Net MUD. For a start we now have all of the commands that Essex has (finally!). The trouble is that these commands are quite powerful and tend to crash the game if misused. There is a favourite trick by Trepur the Wizard which is to pick up the rain and start fighting it! This can cause chaos as the program was not designed to do things like that. As a result, the game has been crashing with monotonous regularity over the last few weeks.

So, if you see a wizard carrying a CLIFF or a RIVER etc . . . remind him to put them back where he found them. Do this tactfully otherwise you are likely to be FODDED (Finger Of Death!).

We now also have access to Valley – which provides an extra 96 rooms to play with. This can be accessed by going east from the start (Narrow road between lands) unless you are a wizard. Wizards can just type SUPERGO VALLEY or SUPERGO MUD and automatically go from anywhere in one land to anywhere in the other! Privileges of rank I suppose! Hehehe! Unfortunately all players (yes – even wizards!) have to drop everything they are carrying to go from one to the other.

On the subject of wizards, I would like to welcome the new Compunet arch-wizard who will be playing as BRIAN. He was formerly known as PIP or MEPHISTO the Wizard. So beware all you misbehaving wizards – Big brother is watching, so don't go picking fights with the sundial etc! OK? Hehehe . . .

There may be quite a large bug in the password system on C-Net MUD. Quite a few players have recently had their passwords changed, thus barring them from using their personas. A few days ago, Richard Bartle, the Archwiz of archwizzes tried to log onto C-Net Mud . . . and found his p/w had been changed! So poor old Richard was reduced to playing as a novice for a while! How demeaning eh! Hehehe. Is there some sinister force at work here? Or is it just carelessness? Can the new Archwiz fix it? Do pigs fly? Will I ever get back to the subject of MUD?

All of you must have by now heard of the infamous 'Kate the witch'. Well, following an argument with an archwiz, she has left C-Net Mud and refuses to return until she gets an apology from him. We are all going to miss you Kate! Snigger snigger.

There is an air of bad feeling surrounding the arch-wiz situation on C-Net Mud. There is only one Compunet Archwiz, and the other four are all old Essex players. Personally I think this is wrong. Why should they be given arch-wiz status over C-Net Mud instead of the regular C-net players? And before all you Essex players start saying 'because all C-Net wizzes are bloody awful (which IS true in some cases!) take a look at your own behaviour on Essex! The number of complaints I have had about wizards on Essex killing for no reason would take two pages on its own! I'm entering dangerous ground here so I think I'll pass this question on to Simon Dally. Hopefully in next month's issue there will be a reply from him on this point!

Here is a plea from all players. If you are just starting MUD then please try not to choose a complex name, such as 'Torquemad' as many players (and wizards too!) cannot be bothered to type names such as that in. If you do choose a name like this, don't be surprised if people don't reply to you or you don't get talked to very much.

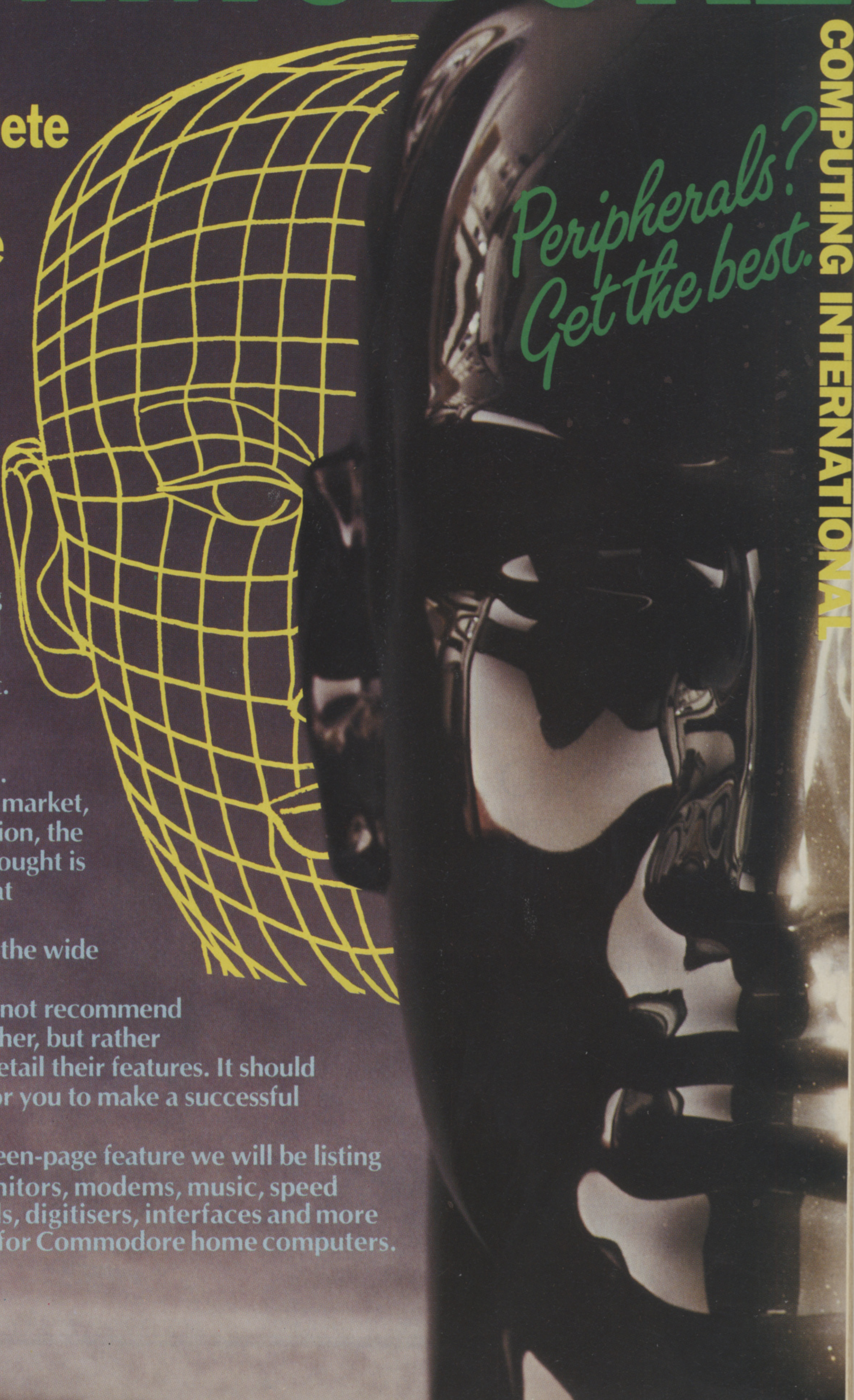
One major gribble that many wizards had about C-Net Mud was the amount of help and treasure being handed out to mortals. Players were appearing with very high scores but very low 'games played' counts. This has now been tightened up, and any wizard who is caught handing out treasure for no reason, or giving too much help will be dealt with quite severely by the arch-wizards. Mentioning no names of course . . . Hehehehehe.

Now that we have Valley, why don't you players actually go and play in it??? It was provided because so many were saying they were bored with C-Net Mud, and that there were not enough rooms. Valley was added, but receives almost no use whatsoever. So come on all you players, have a hack at valley – but beware the Evil Wood!

What with M.U.D. being released via BT in the next few weeks (or so they say) one would have thought that Compunet would have lowered their prices a little to compete, but they haven't. So if you want to play C-Net Mud but can't afford it, join the group and get them to lower their prices. Otherwise many people (including yours truly) will most likely start playing M.U.D. when it comes out. On that point I leave you. Happy Mudding, and don't forget about Valley!

COMMODORE ADD-ON GUIDE

COMPUTING INTERNATIONAL


Peripherals? Get the best.

CCI's Complete Guide to all Commodore Peripherals you could use.

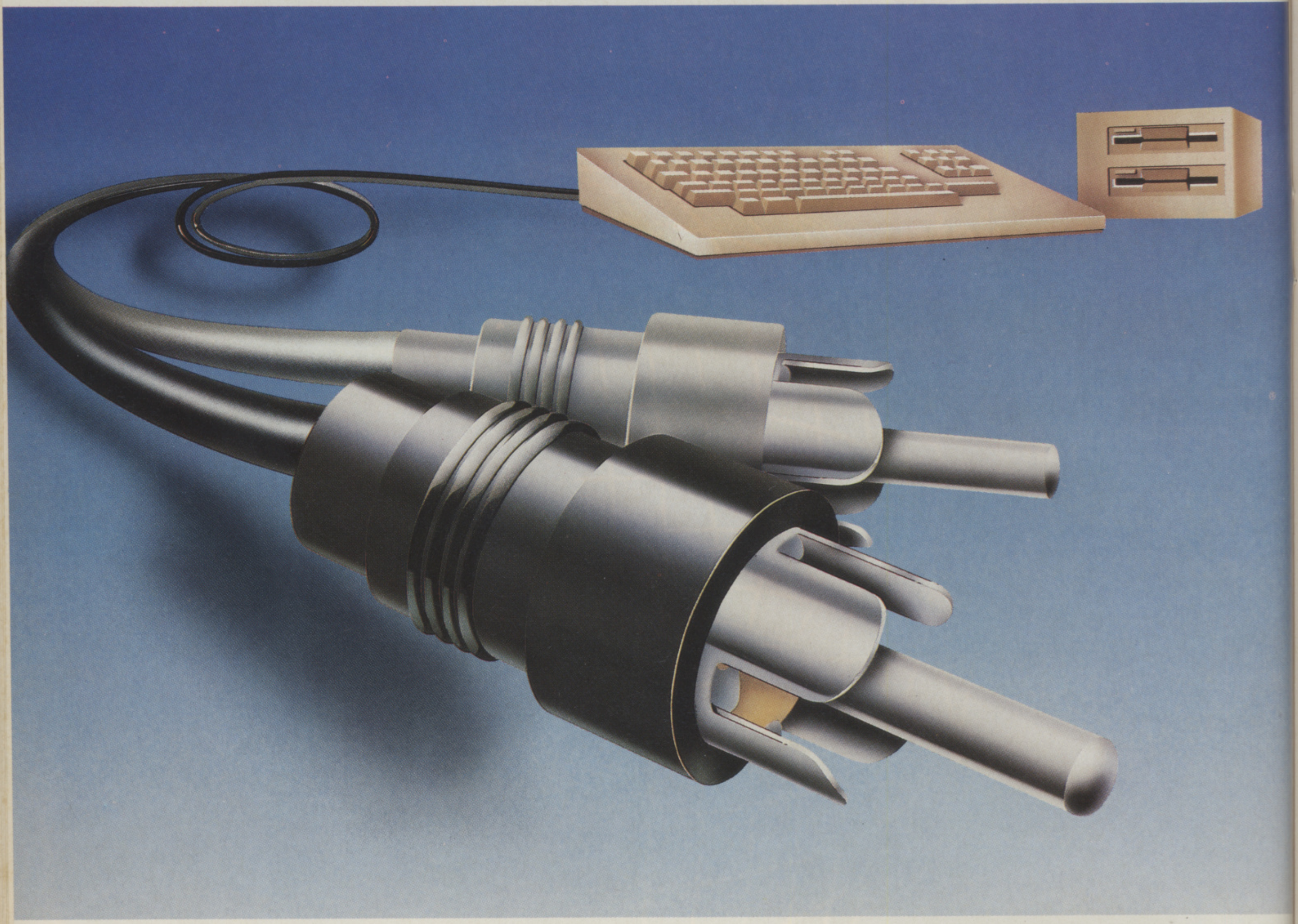
There comes a time when, having begun to understand your computer, you decide that purchasing a peripheral would add to both the enjoyment and the usefulness of it. In fact it is peripherals that really make the computer a useful tool.

In the Commodore market, almost without exception, the first peripheral to be bought is a joystick, but even that decision can become difficult when you see the wide variety available.

This CCI guide will not recommend one product over another, but rather list the products and detail their features. It should then be much easier for you to make a successful decision.

In this month's sixteen-page feature we will be listing Printers, plotters, monitors, modems, music, speed loaders, motherboards, digitisers, interfaces and more peripherals available for Commodore home computers.

HOW DO YOU MAKE A COMPUTER SHARPER?

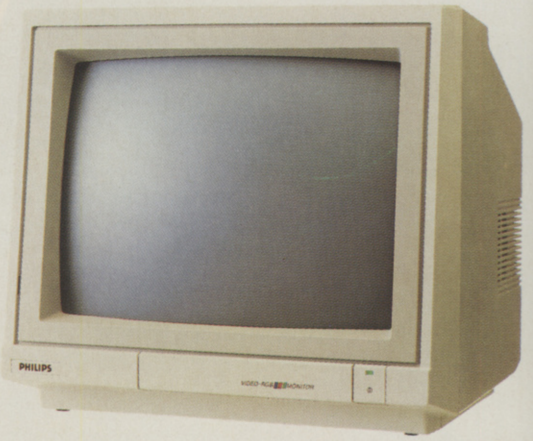


PLUG IT INTO A PHILIPS PERSONAL MONITOR.

A Philips personal monitor gets the very best out of your computer. It makes using your computer more rewarding as the definition and resolution gives the clear display you need.

Philips offers you a complete range of both colour and monochrome monitors. One of them is exactly right for your computer. With over 50 years in screen technology, Philips know how to give you the right image.

Philips personal monitors are suitable for virtually all personal and home computers. Just complete the coupon and we'll send you full information.



Post this to: Stephen Paul, Marketing Manager, Computer Monitors, Philips Electronics,
City House, 420/430 London Road, Croydon, Surrey CR9 3QR

NAME: ____________________ Tick if trade enquiry ☐

ADDRESS: ____________________

____________________ POSTCODE: ____________________ CC1

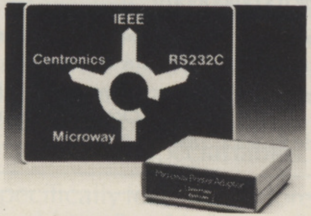
PHILIPS. TAKE A LOOK AT OUR IMAGE.

PHILIPS

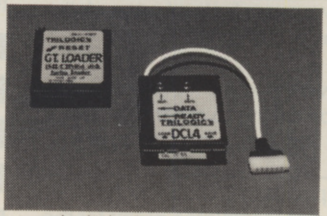
ADD-ON GUIDE

MONITORS

Product	Features	Price	Guarantee	Company
BM 7502	P31 Phosphor, green screen 12" Mono	£87.95	12 months	Philips
BM 7522	LA Phosphor, amber screen 12" Mono	£91.95	12 months	Philips
BM 7542	WD Phosphor, Paper white screen, 12" Mono	£91.95	12 months	Philips
BM 7513	P39 Phosphor, green screen 12"	£119.95	12 months	Philips
CM 8500	Std. resolution, grey glass screen 14" colour, composite video	£222.95	12 months	Philips
CM 8501	Std. resolution, grey glass screen RGB 14" colour	£243.95	12 months	Philips
CM 8524	Std. resolution, dark glass etched screen, composite video + RGB 14" colour	£279.95	12 months	Philips
CM 8533	Med. resolution, dark glass etched screen, composite video + RGB 14" colour Compatible with 64, +4, 16, 128, PC	£314.95	12 months	Philips
CM 14	14" monitor, RGB, Scart, composite video. Colour.	£199.99	12 months	Fidelity
KX 14 CP1	14" monitor, new and specially designed unit for use with personal computers. High resolution, video input connector enables it to be used with VTR or TV tuners and direct broadcast satellite.	£462.50	12 months	Sony
1701	14" colour monitor gives the sharpest picture with the most vivid colours possible from any Commodore home computer. It has two inputs. The composite video input at the front will accept a signal from the VIC 20 or a suitable video recorder. The second input accepts chrominance and luminance signals output from the 16, 14 and +4. Comes complete with 8 pin connecting lead.	£230.00	12 months	Commodore



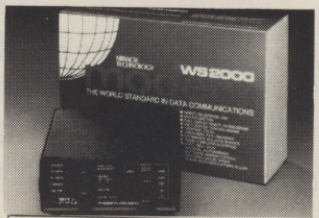
Interface Systems' low-cost printer interface adapter.



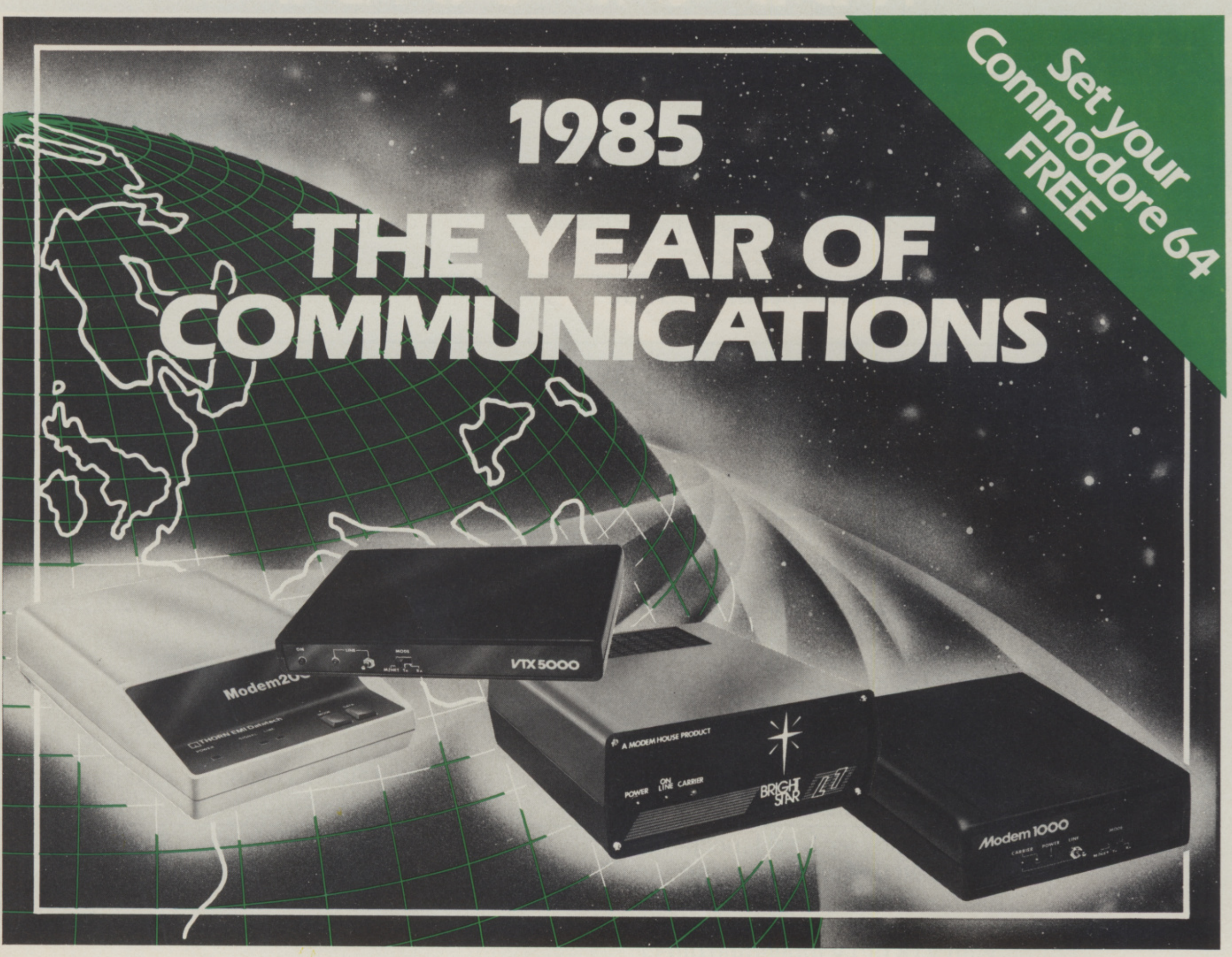
Loads disks faster with Trilogic's GT Loader.

Seiko's computer wrist terminal.

Print with the Rotronics printer.



Miracle Technology's WS2000 modem.



A whole new world awaits you and your 64. The world of Prestel, Micronet, Viewfax, Homelink, Citiservice, This is the world of product reviews, mainframe games, home banking, business information, commodity futures, armchair shopping, real time conversation, electronic notice boards, helpful tips, ICPUG, news, Telex-Link, Mailbox, Chatline, Gallery etc. This is the world of telesoftware, with programmes to download into your 64 and save to disk or tape. Many telesoftware programmes are provided free of charge or at nominal cost.

Dialog with over 600 massive databases on call and almost unlimited information on just about any subject is accessible from your 64, together with BT Gold, Easylink, One to One etc., with electronic mail, business services and telex facilities.

You can link to Bulletin Boards in your area for local news, club news, letters, jokes, poems, helpful tips, etc. It's a whole new experience.

Take the first step. Make a giant leap for your 64. Communicate with Modem House and you'll soon be talking to other '64 users, linking to other micros and swapping files, tips, programmes or just chatting.

Modem House are the largest suppliers of Commodore communication equipment. We also supply complete systems for the Pet 2000, 3000, 4000 and 8000 series.

MODEM HOUSE

70 Longbrook Street, Exeter, Devon EX4 7AP Tel: (0392) 69295

The most popular 64 micropack in use today, will link you to Prestel, Micronet 800, Viewfax 258, Homelink, Farmlink, Citiservice, From Modem House, the complete system is on offer at the incredible price of £99.95 inc. VAT, p & p.

Optional terminal software to link you to BT Gold, Easylink, One to One, Dialog and Bulletin Boards is available at £29.95 inc. VAT, p & p.

Complete Commodore 64 micropack

special price **£99.95** inc. VAT p & p

for a limited period only.

Special, special offer, order your 64 micropack now and get a **FREE** quarter's subscription to Micronet 800 and Viewfax 258 (Prestel Microcomputing).

Modem House, 70 Longbrook Street, Exeter, Devon EX4 7AP Tel: (0392) 69295

Please send me .... Commodore 64 Micropack(s) £99.95 each

.... Optional Terminal Software £29.95

I enclose £................../Bill my Access No. ....

Name ....

Address ....

....

....

Telephone No. ....

Please allow 28 day delivery

This offer applies only while stocks last

ADD-ON GUIDE

PRINTERS/PLOTTERS

Product	Features	Machine	Price	Guarantee	Company
MT-85	7 × 9 dot matrix. Max print speed 180 cps. NLQ mode 45 cps. Max paper width 10″. Fully IBM and Epson compatible.	64, VIC 20 (needs 'black box')	£369.95	12 months	Mannesman Tally
MT-86	As above. Max paper width 15″.	64, VIC 20 (needs 'black box')	£469.00	12 months	Mannesman Tally
1510 Printer/Plotter	Uses a continuous roll of paper and can plot, draw and write in four colours. Ideal for program listings, graphs, pie charts, creating designs and drawing pictures. Max paper width 4½″. Print speed 14 cps.	64, VIC 20, 16, +4	£99.99	12 months	Commodore
MPS-801	Impact dot matrix (uni-hammer method). Max print speed 50 cps. Pin feed. Max paper width 10″. Serial interface.	64, VIC 20, 16, +4	£230.00	12 months	Commodore
MPS-802	Serial impact dot matrix. Max print speed 60 cps. Pin feed and friction. Max paper width 10″. Serial interface.	64, VIC 20, 16, +4	£345.00	12 months	Commodore
MCS-801	Colour dot matrix. Max print speed 50 cps. Tractor feed.	64, VIC 20, 16, +4	£399.99	12 months	Commodore
DPS-1101	Daisywheel (Triumph Adler compatible) letter quality. Alternative type faces available such as italics, gothic and pica. Max print speed 18 cps. Friction feed. Max paper width 13″.	64, VIC 20, 16, +4	£399.99	12 months	Commodore
Riteman C+	9 × 7 dot matrix. Max print speed 105 cps draft. Max paper width 10″.	64, VIC 20, 16, +4	£240.00	12 months	C.Itoh
Ibico LTR-1	Ink roller, friction feed. Max print speed 12 cps letter quality. Max paper width 8½″.	64, VIC 20, 16, +4	£119.95	12 months	Saga
HR-5	Thermal printing 9 × 9. Max print speed 30 cps. Max paper width 80 columns.	64, VIC 20	£110.00	12 months	Brother
P-40	Dot matrix 9 × 6. Max print speed 45 cps. Max paper width 40 columns. Parallel or serial interface.	64, VIC 20 (needs 'black box')	£86.91	12 months	Epson
Rotronics DX-85	9 × 9 dot matrix. Max print speed 120 cps draft. NLQ available. Max paper width 80 columns. Friction and pin feed and automatic and single sheet loading. Bit-mode (graphics) operation allows printing of graphs and special tables.	64, VIC 20	£233.95	12 months	Rotronics
SG10C	Specifically for Commodore machines. 9 × 11 dot matrix. 2K buffer. Max print speed 120 cps draft. NLQ mode. Max paper width 10″. Detachable tractor feed. Parallel interface with option of serial interface.	64, VIC 20, 128	£225.00	12 months	Star
SD10	9 × 11 dot matrix. Friction and tractor. 2K buffer. Max print speed 160 cps draft. NLQ mode. Max paper width 10″.	64, VIC 20 (needs 'black box')	£389.00	12 months	Star

PRINTERS/PLOTTERS

Product	Features	Commodore Machine	Price	Guarantee	Company
SD15	As above. 16K buffer. Max paper width 15″.	64, VIC 20 (needs 'black box')	£489.00	12 months	Star
The Powertype	Daisywheel printer (Qume). Parallel interface and also built-in serial interface. Max print speed cps.	64, VIC 20 (needs 'black box')	£379.00	12 months	Star
Seikosha GP-100VC	Designed for Commodore machines. 80 column dot matrix. Max print speed 50 cps draft. No NLQ mode. Max paper width 10″. Tractor feed.	64, VIC 20	£115.00	12 months	DDL
Seikosha GP-1000VC	12 × 9 dot matrix. Max print speed 100 cps draft. NLQ 20 cps. Tractor feed. Max paper width 10″.	64, VIC 20, 16, +4	£279.00	12 months	DDL
MT-80	9 × 8 dot matrix. Can handle all the Epson codes. Max print speed 100 cps (uses square 'needles' for good print quality). Max paper width 10″.	64, VIC 20 (needs 'black box')	£217.00	12 months	Mannesman Tally
P-80	9 × 6 dot matrix. Single sheet feed. Max print speed 45 cps draft. Max paper width A4. Parallel and serial interface.	64, VIC 20, 128 (needs box)	£160.00	12 months	Epson
P-80XS	24 × 18 dot matrix. Single sheet feed. Max print speed 45 cps draft, 22.5 cps correspondence. Max paper width A4. 2K buffer. Single sheet feed.	64, VIC 20, 128 (needs box)	£250.00	12 months	Epson
LX-80	18 × 12 dot matrix. Single sheet and continuous with Automatic Feeder optional. Max print speed 100 cps draft, 16 cps correspondence. Max paper width 254mm. 1K buffer. Parallel centronics standard.	64, VIC 20, 128 (needs box)	£255.00	12 months	Epson
H-180	10 colour Printer Plotter. Graphs, solids, outlines or cross hatching. Matt, gloss paper and film. A4. Parallel centronics standard. Serial optional.	64, VIC 20	£400.00	12 months	Epson

PRINTER/BUFFERS

Comprint	Will fit inside a Printer, allows full use of Printer features and full use of Commodore features. 2K buffering. Boxed version	64, VIC 20, +4	£61.99 £99.50 incl.		A-line Dataspeed

INTERFACES

Superbox 64	Expansion unit which features three independent cartridge slots, IEEE interface that is totally transparent. Reset switch activates cold start on computer. Will connect up to 3 cartridges at the same time.	64	£67.85	12 months	Handic

Interfaces (cont)

Product	Features	Machine	Price	Guarantee	Company
The Commodore Connexion	Software package and cable enables the 64 user to link the computer to any standard centronics printer. Has two modes – a 'normal' mode providing carriage control facilities and 'mode 2' for printing characters direct. Does not interfere with user memory.	64	£19.95	12 months	SMC
Comprint	Two internal versions (Epson and Canon), just plug in and connect cable. 2K buffer storage. 8K buffer storage. Stand alone version.	64, C.16	£61.99 £80.50 £99.50	12 months	Micro Control
92000	Interface/buffers allows connection of a printer with a centronics interface to Commodore 64. Connection is made via the serial port and thus no driver program is necessary, no buffer memory is taken up and the user port stays free.	64, C.16, C.128, +4	£47.50	12 months	FCC
92008	As above, 8K buffer.	64, C.16, C.128, +4	£59.99	12 months	FCC
92000/G	In addition is able to print all CBM special characters, block graphics, CBM single point graphics etc. Built-in DIL switches.	64, C.16, C.128, +4	£59.99	12 months	FCC
92008/G	As above with 8K buffer.	64, C.16, C.128, +4	£64.99	12 months	FCC
Interpod	Full IEEE and RS232C communication. Can accomodate 1541 d/d, 8050 and 4040 disk.	64, VIC 20	£59.95	12 months	Cheetah
The Connection	Fully intelligent Parallel Printer Interface designed exclusively for Commodore computers. Plugs into the disk (serial) socket and translates Commodore ASCII to standard ASCII. Provides two modes. 2K buffer. Also features an on-board printer test to isolate problems.	All	£84.95 for the Epson version £79.95 for all other models	12 months	Tymac
PRINT 64	Serial IEEE to Centronics interface. Two leads, one plugs into the serial port on either the computer or the disk drive and the other into the printer. Includes Supply Connector Lead for cassette port. Commodore graphics characters, normal and inverted. Can assign any PRINT 64 function to any program's secondary address.	64	£76.95	12 months	Jansen
Ibek Interface	Built-in functions.	64	£59.95 + VAT	1 year	Data Star
Trippler Interface	Built-in functions.	64	£45.00 + VAT	1 year	Data Star
D.C.P. Interfaces Interpac 1 & 2	Full system of interfaces. Multi purpose, and can be connected to 64 & 128. One of the most versatile on the market. No software.	64, 128	1-£49.95 2-£39.95 Intercards £19.95	1 year	D.C.P. Micro Developments. Sole suppliers Commotion

MODEMS

Product	Features	Machine	Price	Guarantee	Company
TM 110	1200/75 bps V23 full duplex mode. Able to store and access data in its own CMOS RAM. RS232 micro interface, auto-dial/auto-recall and auto transmission of ID. Up to 8 telephone numbers can be stored.	64, VIC 20	£99	12 months	Tandata
TM 200	Includes all the features of the TM 110 and in addition to 1200/75 baud full duplex also offers 75/1200 bps full duplex, 1200/1200 half duplex to allow two micros to 'chat' and 300/300 bps full duplex with answer and originate mode allowing use with many conventional databases.	64, VIC 20	£173	12 months	Tandata
Modem 1000	Can access Prestel, Micronet, with option to access B.T. Gold and 1275 Bulletin boards. Free quarter's subscription to Micronet with every purchase from Modem House.	64, 128	£99.95	12 months	Modem House
WS 2000	Single-unit multi-standard, multi-speed, offering a very wide choice of operational facilities. Can transmit and receive at 300 baud full duplex, 600 baud half duplex, 1200 baud half duplex and Prestel/Telecom Gold.	All with RS232/serial interface	£129.95	12 months	Miracle Technology
WS 3000 V2123	Fully intelligent, keyboard-instructed, autodialling, auto-answering. Supports both CCITT and Bell standards, 60-number internal telephone directory, speed buffered RS232 port. Allows 300, 600, 1200, 1200/75 and 75/1200 baud rates.	All with RS232/serial interface	£295.00	12 months	Miracle Technology
WS 3000 V22	Adds 1200 baud full duplex	All with RS232/serial interface	£495.00		Miracle Technology
WS 3000 V22bis	Adds 2400 baud full duplex. Protect 3000 Data Security Option £98 when purchased with modem.	All with RS232/serial interface	£650.00	12 months	Miracle Technology
Commodore Communications Modem	1200/75 V23 full duplex, asynchronous operation. Easy to fit, easy to use. Connection direct to the cartridge port of a 64 and direct to a British Telecom series 600 socket. Compunet software held in ROM (8k) for immediate interaction after switch on. Soft load options provide 64 to 64 direct communication. One year's free subscription to Compunet	64	£99.99	12 months	Commodore

Keep this Guide!

When you choose a peripheral for your computer make sure you check up in this and last month's section of the CCI Guide to peripherals. If you write or telephone an order for a peripheral to the manufacturers listed here be sure to mention you saw it in the CCI Guide. It will ensure you get the best service.

£79·99. All in.

(plus p & p and insurance).

APPROVED
serial no. 200002

Now you can buy a Communications Modem for your 64 or 128 direct from Commodore at an amazing price.

Just £79.99.

A small price to pay, when you consider what the Modem gives you.

For starters there's everything on the following list:

You can link up with other 64 or 128 owners – swap games, information, send messages, receive replies or just chat.

Download free software, including over 50 educational packages.

Buy the latest software from leading companies at special prices.

Meet friends and foes in MUD the multi-user adventure game.

Access giant data banks like Prestel, Micronet, and Blaise.

Receive your first year's basic subscription to Compunet absolutely free. Worth £30.00

Free access to Compunet between 6.00pm and 8.00am. And all weekend.

Cheap to use. Most people's calls will be charged at local rates – only 40p per hour.

Easy to install – plugs straight into a new B.T. socket.

All this, plus much more will be yours when you take advantage of this "£79.99. All in" special offer.

If you want to get more out of your 64, or 128 by spending less on a modem, please complete the coupon and send to:

commodore

Commodore Communications Modem,
1 Hunters Road, Weldon, Corby,
Northamptonshire NN17 1QX,

Please rush me a Commodore Modem with a FREE subscription to Compunet.

☐ I enclose a cheque/postal order for £84.94 to include post, packing and insurance (at £4.95).
Make cheque payable to Softpost.

☐ Please debit my Visa/Access card

Access/ Visa no ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Name (block capitals please)__________

Signature__________

Address__________

__________Postcode__________

Allow 28 days for delivery.
Registration subject to Compunet terms and conditions.
Send to: Commodore Communications Modem, 1 Hunters Road, Weldon, Corby, Northants NN17 1QX.

*A new style B.T. socket is required. Prestel and Micronet require additional subscriber charges. Prestel is a registered trademark of British Telecom. Micronet is a registered trademark of Telemap.

MUSIC ADD-ONS

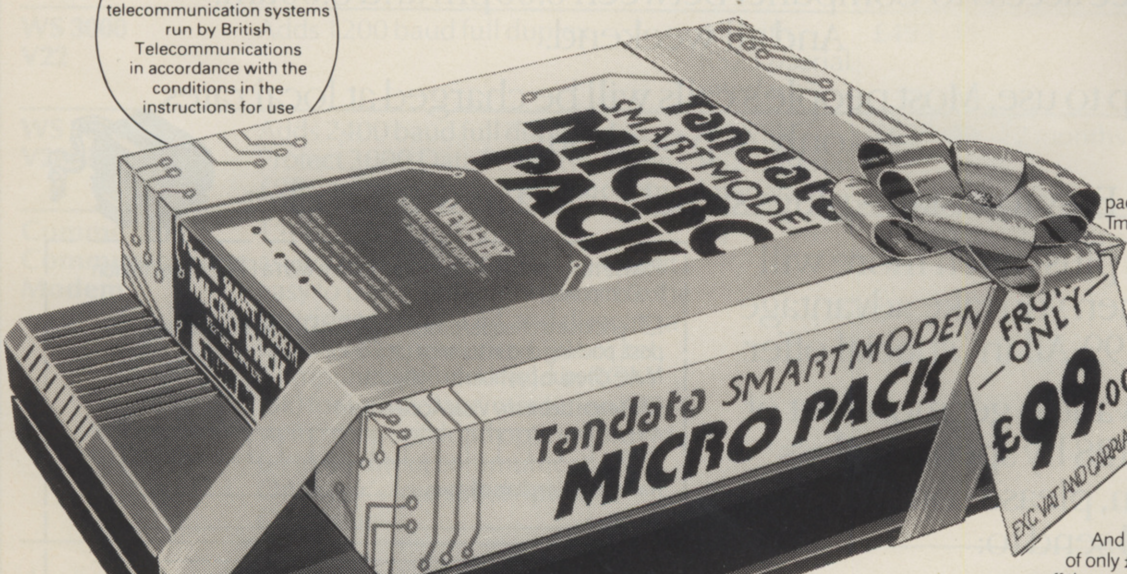
Product	Features	Machine	Price	Guarantee	Company
Sound Set 1	Disk containing over 50 new samples for Syntron Digidrum. Latin and Syndrum kits plus full selection of tom-toms, sweep, pitchbend toms, cymbals, hihats, Latin effects and syndrum effects. Also in cassette.	C16	£16.50	12 months	Syndromic
Digital Music System (Microsound)	Designed to provide the ability not only to play back the sampled sounds at various pitches, but also to create complex sounds using Dynamic Amplitude Modulation, Definable Pointer sets, Looping, Reversing, and mixing different sample sounds. Keyboard is a full size 4 octave unit that connects to the 64 via the games ports and requires no external power supply. The Sound Control Program provides a complete display of the status of the synthesizer, together with a comprehensive set of single key commands for control while playing.	64	£165.22		Autographics

Keep this Guide!

When you choose a peripheral for your computer make sure you check up in this and last month's section of the CCI Guide to peripherals. If you write or telephone an order for a peripheral to the manufacturers listed here be sure to mention you saw it in the CCI Guide. It will ensure you get the best service.

TANDATA
FOR

APPROVED
for use with
telecommunication systems
run by British
Telecommunications
in accordance with the
conditions in the
instructions for use



Tandata's complete communication
package for the Commodore 64 includes a
Tm 110 smart auto-dial modem
and matching Micropack
complete with software, cable and
instruction manual.
In short, everything you need to
turn your 64 into an instant powerful
viewdata terminal. You can access
Prestel, including Micronet 800 and
Viewfax, download telesoftware
programmes – many of them free of
charge, shop by post and carry out
home banking. You can even send
and receive messages and telexes.

CBM 64

And Tandata's special Christmas promotion
of only £99 (plus VAT & Carriage) saves you £42
off the usual price!

INSTANT AUTODIAL

Plug the ROM cartridge into your CBM 64,

ADD-ON GUIDE

Product	Features	Machine	Price	Guarantee	Company
RMS 6H	JMS Midi Master Synchronizer allows synchronisation of conventional trigger signals and Sync Signals with MIDI synchron code. All Sync Codes are available simultaneously at the outputs, with each capable of controlling several devices. Also incorporates Sync To and Sync From tape.	64	£ 239.00		Rosetti
RMS 20C	Midi Multitrack Composer. An effective step time Composer program offering six channels with Computer input one note at a time. Editing facilities include pitch, gate time, velocity, sound changes and transfer.	64	£ 49.95		Rosetti
Microvox	Package consists of sampling unit, system disk (with 'start-up' samples) and Library disk. The sampling unit has two programmable 24dB/octave filters and gives a S/N ratio of 59 dB.	64	£229.95		Supersoft
Siel CMK 49	Music Keyboard, 4 octaves, fits directly to expansion port, software allows complete control over SID chip, programming in mono and poly modes, MIDI Master Keyboard function w/split facility, 99 sounds per file possible, 40 sounds immediately available, demo songs.	64	£125.00 incl.	12 months	Syndromic

A COMMUNICATIONS

R YOUR 64.

ations
des a

d to
rful

nd

ree of
out
send
exes.

ion
£42

connect it to the Tm 110 modem, and you're ready to go. Autodial up to 8 telephone numbers with a single keystroke – the modem will automatically log-on to Prestel, or re-dial if the number is unobtainable. The internal loud speaker, LED's and screen messages monitor call progress of the built-in V23 (1200/75 bps) smart modem.

COMPLETE SOFTWARE FEATURES

The software, instantly available when you switch on the cartridge, covers virtually all your communications requirements. Full colour Prestel, or conventional scrolling terminal, with its own editor for easy off-line message preparation. Pages and data can be stored to disk/cassette or recalled and can be printed. Programs can be downloaded using the telesoftware downloader.

It's ideal for Prestel, Micronet 800, Viewfax 258, private viewdata systems, Easylink, Telecom Gold and many Bulletin Boards.

FULL SUPPORT

A telephone Help Disk gives you full support, and an Installation service is available for business customers.

To order your sample Tandata communications package of modem and software and all leads for your 64 or to find out more, simple complete the coupon.

Tandata

Tandata Marketing Limited
Albert Road North, MALVERN, Worcs. WR14 2TL.
Telephone: 06845 68421. Telex: 337617 Tandat G.
Prestel*799# Telecom Gold 81 : TANOOI

Please send me a Tandata complete communications package for the Commodore 64 at £116.15 (including VAT and carriage)

I enclose a cheque made payable to Tandata Marketing Ltd. OR charge my ACCESS/VISA number

Expiry Date

I would like further details on your Commodore 64 communications package ☐ (please tick)

Name

Address

Send to:
Tandata Marketing Limited,
Albert Road North,
Malvern, Worcs. WR14 2TL.

Prestel is a registered trade mark of British Telecommunications plc. Micronet 800 is the trading style of Telemap Ltd. and British Telecommunications plc.

CCI/03

IT MAKES DRUMMING SOUND LIKE HARD WORK

Whether you want to play along to it, do demo's and record with it, sing along and dance to it or just enjoy programming it — The Syntron Digidrum — Get It!

The Syntron Digidrum comes complete with a hardware user port connector, audio out, trigger out, easy to follow user's guide, software with the first eight digital samples including Crash Cymbal, Snare Drum, Bass Drum, Floor Tom, Hi Tom, Med Tom, Open Hi Hat, Closed Hi Hat and programming functions. The software contains a complete set of demonstration patterns and songs — All this for just **£65.00** Inc VAT.

SMALL COMPACT, QUALITY, BOOM, CRA
BBIG

There is already a new sound sample set in preparation which will contain over 40 new samples including Syn Drums, Latin percussion, Hand Claps and many more for only £16.50! All purchasers of the Syntron Digidrum will receive details of the new sound samples as they become available plus a FREE subscription to the SYNDROMIC USERBASE which includes a membership card and a FREE quarterly newspaper on computer music and computer musicians written by leading music and computer journalists. Please fill out and return the coupon below.

THE BBIG BBBLACK BEAT BBBOX

SYNDROMIC MUSIC

SYNTRON DIGIDRUM

The Syntron Digidrum is an exciting professional digital drumcomputer designed to operate with the Commodore 64.

Using 'live' digital sound samples which are encoded onto software the user has a programmable drum machine with a sound quality many times the price.

Easy visual grid programming, hear the sounds you enter, 51 patterns available in memory plus 10 songs linking 100 patterns together are possible with full copy, insert and delete functions.

☐ I would like further information on the Syntron Digidrum

☐ I would like to order my Syntron Digidrum(s)

NAME ....

ADDRESS ....

....

Syntron Digidrum — Disk version @ £65.00 Inc. VAT ....

— Cassette version @ £65.00 Inc. VAT ....

Please add £2.50 for packaging/postage/insurance.

I enclose a cheque/postal order — made payable to SYNDROMIC MUSIC — to the value of £.................

All orders should be sent to SYNDROMIC MUSIC, 35A Grove Avenue, London, N10 2AS

SYNDROMIC MUSIC GUARANTEE

Not to Bank your monies until the Goods are ready for Dispatch.

Please allow 21 days for delivery

digi ever hear such a sound?

• COMMODORE 64 • TRANSFER ALL MAJOR TURBOS • AUTOMATIC • NO USER KNOWLEDGE •

NO HARDWARE • TURBO IDENTIFIER • AUTO LOAD OPTIONS

DISK TO DISK • DISK TO TAPE • TAPE TO TAPE • TAPE TO DISK

LOOK AT DOSOFT'S NEW OFFERINGS AND SEE WHAT'S IN THEM FOR YOU

'The best transfer utility of the lot'

Your 64

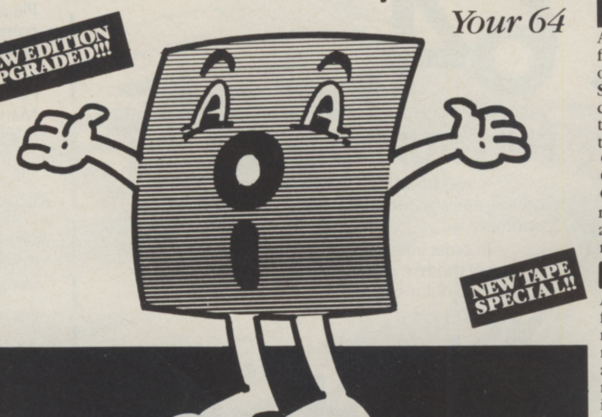
MegaTransfer Disk

NEW EDITION UPGRADED!!!

Our complete collection of tape to disk transfer utilities covers *all* the major turbo loading systems, including the latest combination picture/stripe loaders, and individual routines for unusual loaders. • Now incorporates DISKUS 1 (previous price £11) for your standard load tape collection • All transfer is automatic • No special hardware or user knowledge required • Efficient use of disk space • Transferred programs reload independently • MegaTransfer Disk will transfer programs which NO other utility will handle • An essential purchase. Don't confuse MegaTransfer with similar utilities which have severely limited capabilities. **£17**

MegaUtility Disk

A handy collection of utilities to make the best of your 1541 and 64. Very fast. Very convenient. • **AlphaLoad** Disk Turbo Loader. Load your programmes at over FOUR times the normal rate. Example: 200 blocks. Normal speed 130 seconds. With Alphaload just 30 seconds. • **Fast Copy** Backup a whole disk in just 3 minutes. Not for heavily protected commercial disks. • **Turbo File Copy** copy selected programs from your disks at TURBO speed. • **Fast Format** Format your new disks at TURBO speed. • **Pro Sprite** A high class sprite library/editor. 100% machine code. Joystick control. **£12.50**



NEW TAPE SPECIAL!!

AND SAVE MONEY TOO!

SAVE! SAVE! SAVE! When you buy any two of **MegaTransfer Disk, MegaUtility Disk,** or **Disk-to-Tape *Plus*** just £24.00 (single disk), or **All Three** at **£29.99** save **£12**

Or save **£33** on our **Complete Collection** (every program in this Ad, including **Professional Disk-to-Tape** and **MegaTape** at only **£39.99** (single disk).

How to get your DoSoftware

All programs for Commodore 64. Send SAE for full details or cash/cheque/PO for fast despatch to:

DoSoft (Dept Y), 2 Oakmoor Ave,
Blackpool FY2 0EE

UK postage included. Europe add 75p. Overseas add £1.50 for airmail.

Disk to Tape *Plus*

A versatile collection of Disk-to-Tape routines for single and multipart programs. Featuring our new tape turbo loader with **Visible Screen** and stripey border • **Automatic** disk to tape • Outputs program sections to tape as they load from disk • Selective disk to tape transfer with or without bootloader • Maximum file length 207 blocks • Not for protected commercial disks. • **Professional** version available—includes mastering scheduler and duplication rights—£25.00 **£12.50**

MegaTape

An outstanding new Tape-to-Tape utility for fast loading programs. • Covers *all* the major loading systems • No extra hardware required • All you need is a Commodore 64 and one tape deck • No user knowledge required • Transferred programs load independently at *Turbo* speed with **Visible Screen** and stripey border • **Double Value**—incorporates RBS Plus to convert your slow load programs to turbo load • Also handles RBS and Fastback programs. **£9.50**

DoSoft

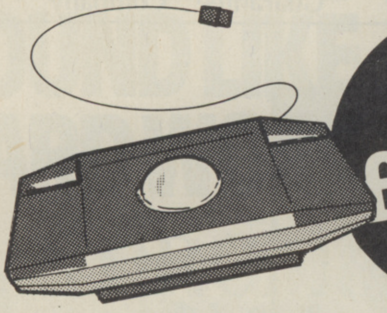
You'll Do it Better with DoSoft

• FAST DISK UTILITIES • LOADERS • 3-MIN DISK COPY • FAST DISK FILE COPY • FAST FORMAT •

MUSIC ADD-ONS

Product	Features	Machine	Price	Guarantee	Company
Commodore sampler					
Music Maker	Starter program. Turns 64 into keyboard.	64, 128	£19.99	3 months	Music Sales
Playalong Albums	3 available: Pop, Classics, Beatles. 12 songs. Auto playback or will teach to play melody.	64, 128	£9.99	3 months	Music Sales
Sound Studio	2 programs in 1. (1) Turns computer into synthesizer. On screen controls. 60 sounds in memory. (2) Sound recording studio (3 channels). Real step time.	64, 128	£14.99	3 months	Music Sales
Sound Sampler	Hardware & software package with audio lead and mike. Samples and digitizes sound. Editing facilities. Pitch sampler. Drum & echo facilities.	64, 128	£69.99	3 months	Music Sales
Sound Expander	Hardware & Software package. Gives 64 extra sounds. Turns computer into generator using F.M. technology. Enables 11 voices to be used at one time. Easy play features built in.	64, 128	£99.99	3 months	Music Sales
Syntron Digidrum	Hardware/software package. Using 64 'live' or real recorded drum digital samples the Digidrum allows patterns and songs to be built up and recorded. Software comes complete with 16 samples, 8 standard kit and 8 glass samples. Demo songs and patterns provided. Audio and trigger outputs.	64	£65.00 incl.	12 months	Syndromic

STACK 100 PRODUCTS



NEW £39·95 inclusive

FOR CBM64

- **TRACKER BALL**
- **BALLPOINT® COLOUR DRAWING SOFTWARE**
- **FUNCTIONS AS JOYSTICK TOO**

(Software is supplied on cassette but is transferable to disk)

A superbly smooth OPTICAL TRACKER BALL system for the CBM64 with a switch to change from ball to joystick mode. Ballpoint is a 100% Machine Code Program in HIGH RESOLUTION MULTICOLOUR mode giving 2 SCREENS of 160x200 pixels. Disk or tape picture saving – Printer Output – Icon manipulation.

- **Over 20 Ball-Selected Commands**
- **Pick-up-and-Move Feature for sections of your pictures**
- **Extra One-Key Commands**
- **16 Colours – Use any 4 at once**
- **Accurate and stable**

Background
Circle
Clear
Colour
Copy
Exchange
Fill
Get
Line
Lock X
Lock Y
Merge
Nib
Output
Plot (OR)
Plot (XOR)
Put
Quadrilateral
Read
Unplot
Write
Zoom
Etc.

Available from good computer stores or direct from
MEEDMORE (DISTRIBUTION) LIMITED
28 Farriers Way Industrial Estate, Netherton,
Merseyside L30 4XL
Tel: 051-521 2202

Access VISA

★ **P&P FREE**

Cheques: Meedmore

STACK 100 PRODUCTS – FROM MEEDMORE LTD.

GENERAL

Verbatim Diskettes	
MD 525-01	**£18.23**
MD 550-01	**£22.43**
MD 577-01	**£22.43**
MD 557-01	**£29.33**
SS SD	**£11.93**
SS DD	**£14.61**

per box of 10

Ribbons	
MPS 801	**£3.78**
1515	**£3.58**
MX80 Etc.	**£3.78**

all others available

Dustcovers*	
CBM64/CBM VIC 20 CBM16	**£1.75**
C2N/1530	**£1.50**
1541	**£3.00**
1525	**£4.00**
1701	**£6.00**
MPS801	**£3.00**

*Anti-Static, Rot Proof, Flame Retardant
all others available

CBM64

Ballpoint Trackball	**£39.95**
Lightpen + 10 games + Draw Program	**£28.00**
Colour Paintbox for Lightpen	**£5.75**
RS232 Interface	**£33.00**
Centronics Interface Tape	**£24.00**
Centronics Interface Disk	**£29.00**
4-Slot Motherboard (Switchable)	**£28.00**
Mini Blitz Disk Compiler	**£15.00**
Joystick	**£7.95**

Cartridges	
Arrow (tape speed up + M/C monitor)	**£16.00**
Arrow + (as Arrow plus assembler/ disassembler)	**£24.00**
Help (20 programming commands plus disassembler plus DOS	**£19.00**
Super Help (as Help plus 2 pass assembler)	**£29.00**
Rom Carrier (take 2x4k Eproms)	**£12.00**

VIC 20

Lightpen + 10 games + Draw Program	**£28.00**
RS232 Interface	**£33.00**
4-Slot Motherboard (Switchable)	**£28.00**
Centronics Interface Tape	**£24.00**
Centronics Interface Disk	**£29.00**
IEEE Cartridge	**£29.00**
Ram 'n' Rom Carrier (takes 3K Ram + 2x4K Eproms)	**£12.00**

C=Cartridge E=Eprom

Vickit 2 (21 Extra Programming commands)	C **£16.00** E **£5.00**
Vickit 3 (20 extra graphics commands)	C **£16.00** E **£5.00**
Vickit 4 & 5 combined (tape speed up – source editor + assembler)	C **£21.00** E **£10.00**

BBC B

Ballpoint Trackball + game	**£29.95**
Lightpen + 10 games + Draw Program	**£28.00**
Graphix-Ed Graphics Software	**£5.75**

MEEDMORE
(Distribution)
LIMITED
28 Farriers Way
Industrial Estate,
Netherton, Merseyside,
L30 4XL
Tel: 051-521 2202

P&P 90p – Free over £10

Access VISA

Prices include VAT

Music Ad d-Ons (cont)

Product	Features	Machine	Price	Guarantee	Company
Siel Sound Buggy	Comes complete with overlay clip-on keyboard but can be controlled via the CMK 49 keyboard. Allows the user complete control over a new sound chip, programmable sounds, rhythms, single finger/fingered chords, split keyboard, auto-accompaniment includes arpeggio, bass, vibrato, memory plus chord and melody sequencer, demo songs, sounds and rhythms already programmed, MIDI facilities include Receive/Transmit plus channel and program change for four individual MIDI lines	64	£99.00 incl.	12 months	Syndromic

MOTHERBOARDS

Product	Features	Machine	Price	Guarantee	Company
Stack	4 slot motherboard (adaptor). Has a unique switching system for each of the 4 cartridge slots which allows the user to turn on and off cartridges without removing them from the computer. Vertical cartridge mounts to give compactness in use and ease of access for fitting and removal.	64, VIC 20	£28.00	12 months	Meedmore

DIGITISERS

Product	Features	Machine	Price	Guarantee	Company
Computereyes	It will digitise from camera, video recorder, video disk and images can be stored on disk. Also enhancements to allow the use of computereyes with some of the popular graphic packages for the Commodore.	64	£139.00	12 months	Stem
SCAN-64	Digitizer plus graphics editor. Comes as a set with optical scanner and mounting bracket, diskette, cable and manual. The function keys open various editing modes with extremely useful commands.	64	£89.50		Jansen

SPEED LOADERS

Product	Features	Machine	Price	Guarantee	Company
Epyx Fast Load Cartridge	Has disk tools e.g. directory, return to basic function, copy (another menu). Can be disengaged without turning off machine. Can adit disks, has a file utility, For trans-programming you have S.Mon. which is a powerful monitor. Numbers may be entered in hex.	64, 128	£24.95	12 months	Centresoft
Robcom Turbo range	Alignment tape kit included in package. 8 pre-programmed function keys. 16 different tape and disk commands. Conversion of all graphic and control codes into readable text. Re-set switch.	64, 128	From £24.95 to £39.95	12 months	Robcom

Speed Loaders (cont)

Product	Features	Machine	Price	Guarantee	Company
GTL 1	This cartridge enables your 1541 disk drive to load 4-5 times faster. Many useful features including abbreviated load/save commands and unique on/off switching etc. Designed to work with most games.	64	£20.00	Money back	Trilogic
GTL 2	As above with built-in reset switch	64	£22.00	Money back	Trilogic
Quickdisc +	Cartridge plugs inot 64 and 1541. Can be switched in and out from the keyboard. Fast format, fast backup, fast file copier. Reset switch. Improved DOS commands. Is compatible with printers and second drives. Cure for 'save @ bug'.	64	£19.95	12 months	Evesham
Turbo 64	A disk specially formatted with the fast load feature built in. Once the disk is made it will load on any unmodified Commodore 64 and 1541 disk drive without having to load anything first. Loading time is 5 times faster and programs can be selected and run from a menu by the press of a single key. To make a Turbo 64 disk all you do is copy the programs from your source disk onto the specially formatted Turbo 64 disk using the Editor.	64	£16.99	Free replacements within warranty period	Cockroach
Warp 5	Disk – will load any program 5 times faster than normal. Has DOS 5.1 commands e.g. type $ and get directory. Unique Header Editor. Utility to allow disk drive to play music e.g. God Save The Queen.	64, 1541	£9.95	Money back guarantee	MPS
Toolkit IV	Disk with comprehensive manual. Can recover corrupted sectors. Fast format (10 secs.) Can change about 30 parameters before format. Fast copy (full disk is under 2 minutes). Fast file copier.	64	£22.95	Money back guarantee	MPS
1541 Express	Cartridge – two leads clip inside the computer. Works with most business software.	64	£34.95	12 months	Ram

MISCELLANEOUS

Product	Features	Machine	Price	Guarantee	Company
Beasty Infra-Red Controller	Infra-Red module. Capacity for up to 8 servos. Precision motors of type used in radio-control models. Battery operated. 3 motors in pack.	64	£143.75 (inc VAT)	3 months	Commotion Ltd.
RC 1000	Simple, powerful wrist terminal. In 10 seconds you can enter the information you select from your computer by connecting Seiko's Wrist Terminal to your RS232C terminal. Eighty 'pages' of 24 characters can be input. Watch functions – time & calendar. Terminal functions – memo, world time, weekly alarm, schedule alarm.	64	£89.95 cass £99.95 disk	12 months	Hattori

INTERPOD

Now the VIC 20 and 64 can communicate with PET peripherals

VIC and 64 users
Would you like to be able to access **any** of these peripherals from your computer?

- ⅓ megabyte disks (Commodore 4040 drive)
- 1 megabyte disks (Commodore 8050 drive)
- 10 megabyte disks (Commodore 9090 hard disk)
- Printers including a wide range of inexpensive IEEE and RS232 matrix and quality printers
- IEEE instruments such as volt meters, plotters etc.

Now you are no longer limited by the VIC or the 64's serial bus. Simply by attaching INTERPOD you can vastly increase the power of your VIC 20 and when used with the new 64, INTERPOD turns the computer into a really powerful system.

With INTERPOD the VIC and 64 become capable of running really professional quality software such as Word-processing, Accounting, Instrument control and many more.

INTERPOD will work with any software. No extra commands are required and INTERPOD does not affect your computer in any way.

INTERPOD
INTERPOD
INTERPOD
The Intelligent Interface for the Commodore VIC and 64
Full IEEE and RS232 Communication

Using INTERPOD is as easy as this:
Simply plug INTERPOD into the serial port of your computer, power-up and you are ready to communicate with any number of parallel and serial IEEE devices and any RS232 printer.

Simply incredible at £59·95

Prices include VAT, Postage and Packing. Delivery normally 14 days.
Export orders at no extra cost. Dealer enquiries welcome.

Send cheque/PO now to:-

Cheetah Marketing

CHEETAH MARKETING LTD.
1 WILLOWBROOK SCIENCE PARK,
CRICKHOWELL ROAD, ST. MELLONS, CARDIFF
TEL : CARDIFF (0222) 777337 TELEX: 497455

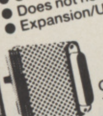
USERS ARE GROWING UP!

PARALLEL PRINTER INTERFACE

Almost every printer on commodore
Epson, Star, Brother, Oki, Juki, Seikosha etc.

- Can be plugged-in directly.
- Compatible with existing software.
- Uses no Memory.
- Does not need to be loaded.
- Expansion/Userports remain free.

44.95



OPTION: built-in 16kB printerbuffer **14.95**

80-COLUMN/GRAFIC CARD commodore 64

with improved wordprocessor

- 80 characters per line.
- Unlimited possibilities with Simon's Basic.
- Grafic/Textpossibilities.

- Adjustable line spacing.
- Digital clock.
- Upper line can be locked.

84.95

VIC-20	C-64		
●		**32kB RAMPACK,** switchable, cased.	53.45
●		**64kB RAMPACK,** idem, incl. highspeed Ramfile software.	74.95
●		**40/80 COLUMNCARD,** your VIC-20 becomes professional.	
●		**MOTHERBOARD,** 2 slots, save your connector.	
●		5 slots, switchable, buffered.	
●		**EPROMCARD,** 2 type selectable sockets.	
	●	**MOTHERBOARD,** 2 slots,	
	●	5 slots, switchable, buffered.	
	●	**COM-IN 64,** create your communication terminal.	
	●	**EPROMCARD,** 2 type selectable sockets.	
●	●	**EPROMPROGRAMMER,** make your own programs on EPROM.	
●	●	**EPROM ERASER,** erases 4 EPROMS simultaneously.	
●	●	**ZENITH MONITOR,** 12", green/amber.	
		when also purchasing a 80-columncard	
●	●	**RELAYBOX**	
●	●	**POWERBOX**	

INFRA-RED SYS
SERVO SYS

10% EXTRA DISCOUNT ON ALL OUR PRODUCTS

NEW FOR CBM 64 SOFTPROM (8k BATTERY RAM TO STORE BASIC & MACHINE CODE).

BOTTOM PRICES FOR VIC 20 PRODUCTS

ZERO Ø ELECTRONICS

- Ask for details and order form
- P&P £ 1.50
- All prices include VAT
- Suppliers to school, universities and government dept
- All products guaranteed
- Please allow 14 days delivery

Overseas dealers required

149 KINGSTREET GT. YARMOUTH NR30 2 PA TEL :(0493)-842023

CHROMASONIC

Computer Centres

48 Junction Road, Archway, London N19 5RD
238 Muswell Hill Broadway, London N103SH

PHONE
01-263 9493/5 or 01-883 3705

C128 and 1570 disk drive package £445

64 COMPENDIUM

C64, Cassette Unit, Music Maker and Software
Adrian Mole book and game, Designers pencil
£199.99

64 GOODIES

C64 and 1541	£299.99
1541 and dot matrix printer	£199.99
1701 Colour monitor	£199.99
DPS1101 Daisywheel printer	£199.99
LX80 with Tractor Feed assembly	£293.00
Comprint interface for LX80 with 64 or 128	£61.99
1541 Disc Drive	£139.00
MPS801 Dot matrix printer	£129.00

64 PROFESSIONAL SYSTEM

C64, 1541, Dot matrix printer, Mono monitor, all leads
£399.99

COMMODORE 64 GUARANTEED FOR 2 YEARS
Write or phone for our latest catalogue

TERMS
Payment by Access. Visa. Bankers Draft. Building Society cheque. Sorry Cheques take 5 days to clear. We reserve the right to alter prices without prior notice. Please check for carriage charges before ording. All prices EXCLUDE VAT instant credit up to £1000 & budget account available

Miscellaneous (cont)

Product	Features	Machine	Price	Guarantee	Company
Rotronics Portable Case	Smart, executive style case with removable lid. Individually tailored foam insert securely protects micro and cassette recorder during transit. Additional storage space in the lid holds manuals and up to twenty cassettes. All components remain fully operational within the case.	64, VIC 20	£34.49		Rotronics
Datapad 16C	Keypad is a strong metal case. It plugs in externally and comes complete with software to define the keypad to your choice of layout.	64	£34.95 incl.		Voltmace

COMPANIES

CBM (UK) Ltd.,
1 Hunters Road,
Weldon, Corby,
Northamptonshire NN17 1QX.
Tel: 0536-205555

Rotronics Ltd.,
Santosh House,
Marlborough Trading Estate,
West Wycombe Road,
High Wycombe,
Bucks. HP11 2LB.
Tel: 0494-452757

Jansen Electronics,
234 Jesmond Dene Road,
Newcastle upon Tyne, NE2 2JU.
Tel: 091 281 1665

Phillips Electronics,
City House,
420-430 London Road,
Croydon CR9 3QR.
Tel: 01-689 2166

Tymac (UK) Ltd.,
Unit 78 Standard Way,
Gravelly Industrial Park,
Tyburn Road,
Birmingham B24 8TL.
Tel: 021 327 6637

Meedmore (Distribution) Ltd.,
28 Farriers Way Industrial Estate,
Netherton,
Merseyside L30 4XL.
Tel: 051 521 2202

Rosetti Ltd.,
138-140 Old Street,
London EC1V 9BL.
Tel: 01-253 7294

Voltmace Ltd.,
Park Drive,
Baldock Herts. SG7 6EW.
Tel: 0462-894410.

Star Micronics UK Ltd.,
Craven House,
40 Uxbridge Road,
Ealing W5 2BS.
Tel: 01-840 1800

C. Itoh Electronics Ltd.,
Beacon House,
26-28 Worple Road,
Wimbledon SW19 4EE.
Tel: 01-946 4960

Epson (UK) Ltd.,
Dorland House,
388 High Road,
Wembley,
Middlesex HA9 6UH.
Tel: 01-902 8892

Tandata Marketing Ltd.,
Albert Road North,
Malvern, Worcs. WR14 2TL.
Tel: 06845-68421

Cockroach Software UK.,
20, The Crescent,
Machen, Newport,
Gwent NP1 8ND.
Tel: 0633-440434

FCC Systems Ltd.,
The Lodge,
Moorlands Road,
Merriott,
Somerset TA16 5NF.
Tel: 0460-73442

Syndromic Music,
35A Grove Avenue,
London N10 2AS.
Tel: 01-833 1335

Hattori (UK) Ltd.,
Hattori House,
Vanwall Road,
Maidenhead,
Berkshire SL6 4UW.
Tel: 0628-72665

Saga Systems,
2 Eve Road,
Woking,
Surrey, GU 21 4JT.
Tel: 04862-22977

Miracle Technology (UK) Ltd.,
St Peters Street,
Ipswich IP1 1XB.
Tel: 0473 50304

Trilogic,
29 Holme Lane,
Bradford BD4 0QA.
Tel: 0274-684289

Centresoft Ltd.,
Unit 10, Parkway Industrial Centre,
Heneage Street,
Birmingham B7 4LY.
Tel: 021 359 3020

Data Star Systems,
182 Royal College Street,
London NW1 9NN.
Tel: 01-482 1711

Jones & Brother International,
Shepley Street,
Guide Bridge,
Audenshaw,
Manchester M34 5JD.
Tel: 061 330 6531

Fidelity PLC,
Victoria Road,
London NW10 6ND.
Tel: 01-965 8771

Handic Software,
Unit 1, The Valley Centre,
Gordon Road,
High Wycombe, Bucks.
Tel: 0494 37514

Modem House,
70 Longbrook Street,
Exeter, Devon.
Tel: 0392 69295

Evesham Micros,
Bridge Street,
Evesham,
Worcs.
Tel: 0386 49641

Supersoft,
Winchester House,
Canning Road,
Wealdstone,
Harrow, Middlesex HA3 7SJ

Sony (UK) Ltd.,
Sony House, South Street,
Staines, Middlesex.
Tel: 0784 61688

Stem Computing,
3 Blackness Avenue,
Dundee DD2 1ER.
Tel: 0382 65113

SMC Supplies,
11 Western Parade,
Great North Road,
Barnet, Herts.
Tel: 01-441 1698

A-Line Dataspeed Devices Ltd.,
3 Auburn Road, Blaby,
Leicester LE8 3DR.
Tel: 0533 778724

MPS Software,
36 Alexandra Grove,
London N4 2LF.
Tel: 01-800 3592

Autographics Ltd.,
P.O. Box 14,
Petersfield,
Hampshire GU32 1HS
Tel: 07308 7403

Cheetah Marketing Ltd.,
1 Willowbrook Science Park,
Crickhowell Road,
St. Mellons,
Cardiff.
Tel: 0222 777337

Mannesman Tally,
Molly Millar's Lane,
Wokingham,
Berks. RG11 2QT.
Tel: 1734 791 619

SUPER GRAPHIX

PRINTER
INTERFACES

FOR COMMODORE 64 AND VIC 20 MICROCOMPUTERS
UNLIKE ANY OTHER PRINTER INTERFACES ON THE MARKET THESE AMAZING PRODUCTS CONVERT STANDARD DOT MATRIX PRINTERS TO NEAR LETTER QUALITY!

CHECK THE OTHER FEATURES BELOW!

★★ STOP PRESS ★★
NOW AVAILABLE FOR
CBM 128K

SUPER GRAPHIX jnr

☐ MICRO BUFFER
☐ GRAPHICS & NORMAL QUALITY PRINT
☐ NEAR LETTER QUALITY
☐ 8 OCTAVE SWITCHES WITH CHANGES CONSTANTLY MONITORED
☐ COMMAND CHANNEL
☐ 10 PRINTER MODES
☐ CENTRONICS COMPATIBLE
☐ SUPPORT MOST MAJOR PRINTERS
☐ 100% COMPATIBLE WITH SOFTWARE FOR VIC 1525 PRINTER
☐ USER MANUAL & SOFTWARE EXAMPLES

PRICE **£49.95** (inc. VAT) Post & Packing **FREE**

SUPER GRAPHIX

☐ 8 K BUFFER STANDARD
☐ 10 PRINTER MODES
☐ 3 INTERNAL SCREEN DUMPS
☐ EXTENSIVE COMMAND CHANNEL
☐ RESET BUTTON TO HALT PRINTING FROM BUFFER
☐ NEAR LETTER QUALITY MODE BUILT IN
☐ CAPABLE OF STORING 2 ADDITIONAL FONTS
☐ CORRECT GRAPHICS / TEST ASPECT RATIO FOR ALL MAJOR PRINTERS
☐ 8 OCTAVE SWITCHES WITH CHANGES CONSTANTLY MONITORED
☐ INTERNAL FONTS SUPPORT, SUPER SCRIPT, SUB SCRIPT, UNDERLINING, BOLD FACE AND CHOICE OF 9 PITCHES

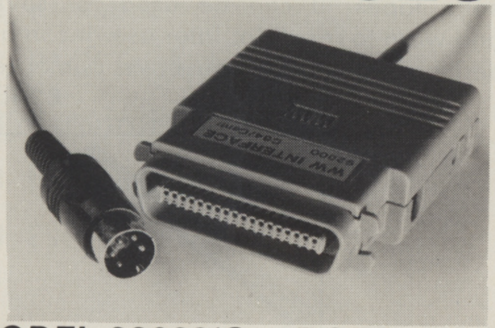
PRICE **£69.95** (inc. VAT) Post & Packing **FREE**

Available Only Through Exclusive Importers & Distributors

Screens Microcomputer Distribution

Main Avenue, Moor Park, Northwood, Middlesex. Tel: 09274 20664. Telex: 923574 ALACOL G

CENTRONICS INTERFACES



MODEL 92008/G – DOES IT ALL!

Full Commodore graphics and special characters, tabs, dot graphics etc. Plus 8K buffer. **£64.99**

ALSO

MODEL 92000 – less graphics	£47.50
MODEL 92000/G – with graphics, no buffer	£59.99

All models software transparent – no driver needed.
Connect to C64 or daisy-chain to disk drive.

FCC *SYSTEMS LIMITED*
THE LODGE
MOORLANDS ROAD
MERRIOTT
SOMERSET TA16 5NF
TEL: CREWKERNE (0460) 73442
PRESTEL MAILBOX 046073442

Please add P&P @ £1.00 and VAT to all orders

DEALER ENQUIRIES
MOST WELCOME

Connexions

The Commodore Connexion

This popular package of software and cable enables the Commodore 64 user to link the computer to any centronics printer.

There are two modes of operation – a 'normal' mode providing carriage control facilities and mode 2 for printing characters direct.

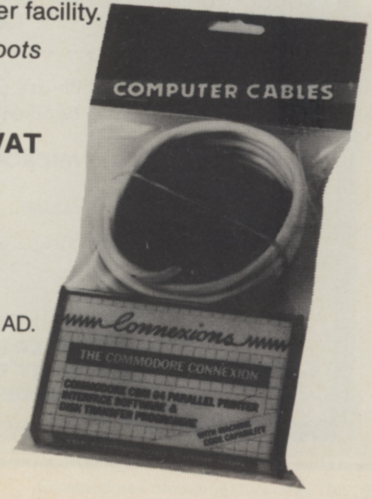
The program sits behind kernel ROM and does not interfere with user memory.

Supplied on tape the Commodore Connexion also has a disk transfer facility.

Available now from Boots and other leading computer stores.

Only £19.95 INC VAT

Another Connexions product from
SMC SUPPLIES
11 WESTERN PARADE,
GREAT NORTH ROAD,
BARNET, HERTS., EN5 1AD.
Telephone:
01-441 1282 (5 lines)
Telex: 295181 SMC G.

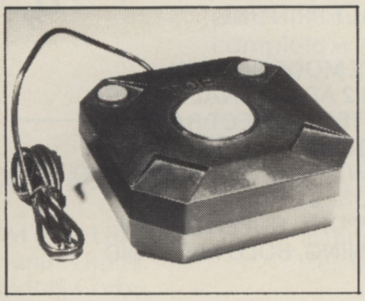


MICROPRIDE LTD.

COMPUTEK JOYSTICK

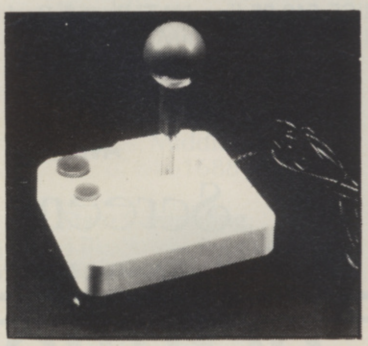
Suitable for use with Commodore 64, Vic 20 and Atari	**£9.95**
For use with Oric/Atmos Oric Interface required	**£11.50**
For use with Spectrum ZX81 Interface required	**£7.95**

Tip Fire Button and side fire button fast action.



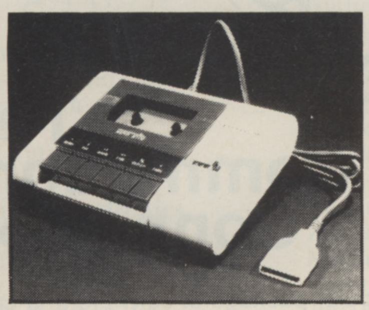
TRACKBALL

Improve your scores and skills with the Computek Trackball. Suitable for use with Commodore 64, Vic 20, Atari, Oric 1, Atmos and Spectrum use interface. **£17.95**



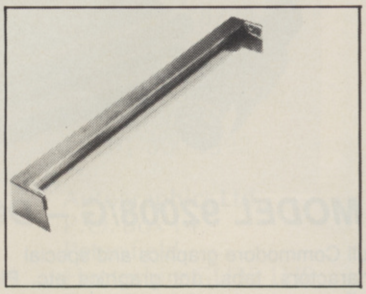
COMPUTEK JOYSTICKS

For use with the BBC Computer. Metal shaft, 2 fire buttons **£12.95**



PM C16 CASSETTE DATA UNIT

Designed for use with Commodore +4, Commodore 64 and Vic 20. This cassette unit is a device for storing and recalling computer programs on ordinary cassette tapes. It can be used for saving programs you have written and want to recall for later use. It can also be used to read pre-recorded programs that you have purchased. **£24.95**



DUST COVER

Clips onto the back of the Commodore 64. Pivits up to allow use of keyboard, fully moulded, clear plastic dust cover. **£7.95**

Please send me the following ....

I enclose my cheque/P.O. made payable to:

MICROPRIDE LTD for £..................

NAME..

ADDRESS..

....

* ALL PRICES INCLUDE POSTAGE & PACKING *

MICROPRIDE LTD.
UNIT 16, SHIPYARD INDUSTRIAL ESTATE,
BRIGHTLINGSEA, ESSEX CO7 0AR.

TOP TWENTY

	GAME TITLE	CHANGE	COMPANY	PRICE (£)
1	Summer Games II	NO CHANGE	US Gold	9.95
2	Skyfox	NO CHANGE	Ariolasoft	9.95
3	Frank Bruno's Boxing	NEW	Elite	7.95
4	Beach Head II	UP	US Gold	9.95
5	Way of the Exploding Fist	DOWN	Melbourne House	9.95
6	Now Games	NO CHANGE	Virgin	8.95
7	Karateka	UP	Ariolasoft	9.99
8	Barry McGuigan's Boxing	UP	Activision	9.95
9	Blackwyche	NEW	Ultimate	9.95
10	Hacker	NEW	Activision	9.95
11	Spy vs Spy II	NEW	Beyond	9.95
12	Rescue on Fractalus	DOWN	Activision	9.99
13	Blue Max/2001	NEW	US Gold	9.95
14	Hunter Patrol	NEW	Mastertronic	9.95
15	Sabre Wolf	NEW	Firebird/Ultimate	9.95
16	Kickstart	NEW	Mastertronic	9.95
17	BMX Trials	NEW	Mastertronic	9.95
18	Paradroid	NEW	Hewson	8.95
19	Hypersport	NEW	Imagine	8.95
20	Excalibur	NEW	Mastertronic	9.95

BUBBLING UNDER

Speed King	Digital	9.95
Wizardry	The Edge	9.95

Compiled by CCI from leading distributors

COMMODO

Don't miss out!

With the growing popularity of Commodore Computing International Magazine, newsagents and bookstalls sell out quickly. More and more frustrated readers wanting the one magazine every Commodore owner needs are finding they are missing out and some months having to do without the latest news, reviews and vital feature articles and programs.

The popular solution is to place an order for your Commodore Computing International Magazine with your newsagent or by direct subscription to us.

A subscription means you get the magazine delivered to your door. It saves you time and makes sure you don't lose out on what's happening in the Commodore world.

Send in the subscription coupon below and get the best Commodore magazine the easy way — through your letterbox. Don't miss out on the best, mail the coupon **now**.

(If you don't want to cut up the magazine, we're happy to have a photocopy of the coupon or a request on plain paper.)

Commodore — Subscription Order Form

To Subscriptions Manager, Commodore Computing International,
40 Bowling Green Lane, London EC1R 0NE. Tel: 01-278 0333 Telex: 267247 FINSEC

Please send me 12 issues of *Commodore Computing International*

☐ Cheque enclosed

☐ Please debit my Access
Card No.

☐ Subscription rate U.K. £15.00
☐ Europe £20.00
☐ Outside Europe £28.50

Expiry date: ______

Cheques should be made payable to:
CROFTWARD LIMITED

Name ______

Address ______

______

County ______ Post Code ______

Telephone (home) ______ (business) ______

Signed ______ Date (Subscription to commence) ______

64 Greetings!

Here is a novel way to send festive greetings to your relations or friends. With CARD.GEN, from Bob Davis, you can generate a Christmas card on Tape or Disk and if you have an MPS 801 or 1525 printer, then you can have the card printed. Or, you could just have a 'window display'.

How to use

First type in CARD.GEN (Listing 1). Save before running it. It contains a short machine code routine, so incorrect data could cause a crash. On running the program you are asked if you are using Tape of Disk. Answer by pressing [T] or [D]. Now you can enter the 'Top' message, ie, TO UNCLE TOM . . . etc. Press [Return] when message is complete. You can use the [DEL] key if required. Now enter the 'Bottom' message, ie, FROM . . . etc. A maximum of 36 characters are allowed for either message.

The program will display a 'greetings screen' with a familiar tune. Pressing [+] or [−] increases/decreases the speed of the tune.

If a printer is connected, pressing [F1] prints that display with 'normal width' characters. Pressing [F7] will printout using 'double width' characters. If you wish you can off-set the printout when printing normal width characters. Press [O] and the music stops. A number is displayed within the 'M' in 'MERRY'. Press [+] or [−] to increase/decrease the number. Press [RETURN] to continue. That number will be the quantity of spaces the card will be printed, off-set to the right, ie 20 will print the card centrally on the paper. Note the largest off-set is 40.

To save the display press [S]. Do read the rest of this article first before doing a save.

Generating a 'card' on Tape/Disk

CARD.GEN saves the actual contents of the screen and colour rams as a binary file naming it 'CDATA', so to retrieve the file a 'boot' program is required, viz CARD.BOOT (Listing 2). This MUST precede 'CDATA', particularly if you are using Tape. To generate a Tape/Disk 'Card', first type in Listing 2 and save it as your master. Now save it on the Tape/Disk you wish to send. For Tape, do not rewind after saving. You can name it what you like. Note, for Disk, change the device number in line 10. Load and run CARD.GEN, enter your messages and press [S]. Place the Tape/Disk in the device and press any key. 'CDATA' will now be saved correctly.

The person receiving the 'card' need only to load and run it like any normal program.

If you wish, changing the value of DF (line 20) alters the speed of the tune. In case you wonder why the sudden jump in line numbers of the data statements, lines 840 to 890 are the same as for Listing 1. It's not necessary to type those lines again. Load and list Listing 1. Type in 'NEW' and press [Return]. Now move the cursor over each line number (840 to 890) and press [Return]. Now type in the rest of Listing 2.

Here is a summary of how CARD.GEN works

Lines 30 to 70. Initialise routine: Sets up arrays, strings and sound registers. Pokes machine code to memory.

Lines 80 to 100. Get Device from user.

Lines 110 to 120. Get 'Top' and 'Bottom' messages.

Lines 130 to 140. Prints the card to the screen.

Lines 150 to 180. Plays one note, sets up delay loop, flash a random star.

Lines 190 to 270. If any relevant key has been pressed, goto xxx. Flash random star, repeat loop for next note.

Lines 280 to 310. Save routine. Copy screen and colour data to RAM. Save RAM to device.

Lines 320 to 360. Set print width sub-routine.

Lines 370 to 410. Print-out routine.

Lines 420 to 450. Sub-routines for Print-out routine.

Lines 460 to 570. Sub-routine to get 'message'.

Lines 580 to 830. Sub-routine to initialise array C$.

Lines 840. Data for colour RAM. (Position of stars).

Lines 850 to 890. Data for music.

Lines 900 to 940. Machine code. Two routines: a) copy screen and colour data to RAM. b) Binary file save.

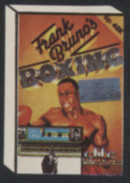
CARD.BOOT works much in the same way except the machine code routine (lines 90 to 110) copies the binary data to the screen and colour RAMs, ie, the reverse procedure as for above. A 'non-locateable' load (line 10) ensures that the binary file always loads into the same place.

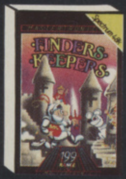
```
10 REM         CARD.GEN  (LISTING 1)
20 REM  (C) B.DAVIS JULY 1985
30 PRINT"▚■":POKE53281,15:POKE53280,15:DIMCR(12),H(28),L(28),D(28),C$(28)
40 FORL=0TO11:READD:CR(L)=D+54272:NEXT:FORL=0TO28:READH(L),L(L),D(L):NEXT
50 FORL=0TO83:READD:POKE49152+L,D:NEXT:FORL=0TO4:READX(L):NEXT
60 CD$="▚▙▙▙▙▙▙▙":CC$="▗▙▙▙▙":PW=0:DF=0.3:GOSUB580:PRINTCHR$(142)
70 FORL=0TO23:POKE54272+L,0:NEXT:POKE54284,18:POKE54285,64
80 PRINTCC$TAB(6)"SELECT :  ▚T■APE OR ▚D■ISK ?"
90 GETK$:IFK$<>"T"ANDK$<>"D"THEN90
100 POKE723,1:DV$="TAPE":IFK$="D"THENPOKE723,8:DV$="DISK"
110 PRINTCC$" ENTER ´TOP´ MESSAGE :-":GOSUB460:C$(2)=M$:M$=""
120 PRINTCC$" ENTER ´BOTTOM´ MESSAGE :-":GOSUB460:C$(22)=M$
130 POKE54296,15:PRINT"▗";:FORL=0TO23:PRINTC$(L);:NEXT
140 PRINT"▮"C$(24);:POKE2023,127:POKE56295,0:FORL=0TO4:POKEX(L),111:NEXT:L=0:C=0
150 DL=0:POKE54273,H(L):POKE54272,L(L):POKE54280,H(L):POKE54279,L(L)
160 POKE54283,17:POKE54276,49:POKE54277,10:POKE54278,59
170 DL=DL+1:IFDL>(D(L)*DF)THEN270
```

```
180 POKECR(INT(RND(1)*12)),INT(RND(1)*151)
190 GETK$:IFK$=""THEN170
200 IFK$="S"THEN280
210 IFK$="■"THENPM=15:GOTO370
220 IFK$="▌"THENPM=14:GOTO370
230 IFK$="O"THENPOKE54296,0:GOSUB320:POKE54296,15
240 IFK$="-"THENDF=DF+.05:IFDF>2THENDF=2
250 IFK$="+"THENDF=DF-.05:IFDF<.05THENDF=.05
260 POKECR(INT(RND(1)*12)),C:GOTO170
270 POKE53280,C:POKE54276,48:C=C+1AND(C<15):L=L+1AND(L<28):GOTO150
280 POKE54296,0:SYS49152:PRINTCC$" ENSURE "DV$" IS SET UP  :  PRESS ANY KEY▓▓▓▓"
290 GETK$:IFK$=""THEN290
300 PRINTCD$:POKE750,67:POKE751,68:POKE752,65:POKE753,84:POKE754,65
310 POKE251,0:POKE252,200:POKE253,208:POKE254,207:SYS49208:GOTO130
320 IFK$="+"THENPW=PW+1:IFPW>40THENPW=40
330 IFK$="-"THENPW=PW-1:IFPW<0THENPW=0
340 IFK$=CHR$(13)THENPRINTCD$"▶▐▌  ":RETURN
350 PRINTCD$"▶▐▌"PW"▌ "
360 GETK$:GOTO320
370 POKE54296,0:OPEN4,4:IFPM=15THENFORL=0TO24:GOSUB440:GOSUB420:NEXT:GOTO410
380 FORL=0TO16:GOSUB420:IFL>0ANDL<3THENFORM=0TO1:GOSUB430:NEXT
390 NEXT:FORL=25TO28:GOSUB420:NEXT
400 FORL=19TO23:GOSUB420:GOSUB430:NEXT:L=24:GOSUB420
410 PRINT#4:CLOSE4:GOTO130
420 PRINT#4,CHR$(PM)C$(L)CHR$(8):RETURN
430 PRINT#4,CHR$(PM)C$(1)CHR$(8):RETURN
440 IFPW>0THENFORM=1TOPW:PRINT#4,CHR$(15)" ";:NEXT
450 RETURN
460 PRINTCD$" ╭──────────────────────────────────────╮"
470 PRINTCD$"▓|                                      |"
480 PRINTCD$"▓|                                      |"
490 PRINTCD$"▓▓╰──────────────────────────────────────╯"
500 PRINTCD$"▓▓▌";M$;:IFL<36THENPRINT"▁ "
510 GETK$:IFK$=""THEN510
520 L=LEN(M$):IFK$=CHR$(13)THEN570
530 IFK$=CHR$(20)ANDLTHENM$=LEFT$(M$,L-1):L=L-1:GOTO500
540 IFK$<CHR$(32)ORK$>CHR$(127)ANDK$<CHR$(161)THEN510
550 IFL<36THENM$=M$+K$:L=L+1:GOTO500
560 GOTO510
570 M$="■▚ "+M$:FORX=0TO36-L:M$=M$+" ":NEXT:M$=M$+"▚":RETURN
580 C$(0)="■▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚▚"
590 C$(1)="■▚                                        ▚"
600 C$(3)="▚                          *    ▓*   *  ■▚"
610 C$(4)="▚▓|╲ ╱|┌─ ┌─╲ ┌─╲ ╲ ╱   *     ▓◤  ▀▀      ■▚"
620 C$(5)="▚▓| ╲╱ || | || | ╲╱          ▓◤  ▀▀      ■▚"
630 C$(6)="▚▓|    |└─ └─╱ └─╱  |       ▓◤    ▀▀  * ■▚"
640 C$(7)="▚▓| *  ||  | ╲ | ╲  |     * ▓◤    ▀▀    ■▚"
650 C$(8)="▚▓|    ||  | | | |  |      ▓◤      ▀▀   ■▚"
660 C$(9)="▚▓|    |└─ | | | |  |   *  ▓◤       ▀▀  ■▚"
670 C$(10)="▚                        ▓◤         ▀▀  ■▚"
680 C$(11)="▚        *               ▓◤          ▀▀*■▚"
690 C$(12)="▚                  *    ▓◤            ▀▀■▚"
700 C$(13)="▚ ▓╲    ╱ ╱ |╲ ╱|  ╱╲  ╱─╲    ▓__▒▒______ ■▚"
710 C$(14)="▚  ▓╲  ╱    | ╲╱ | ╱  ╲ |    ▓╱  ▒▒    ▓◤▀ ■▚"
720 C$(15)="▚   ▓╲╱     |    | |   | ╲   ▓╱  ▓◥▓ ◤▓  ▓◤ ▀ ■▚"
730 C$(16)="▚   ▓╱╲     |    | ┌───┐  ─╲ ▓╱       ▓◤  ▀ ■▚"
740 C$(17)="▚  ▓╱  ╲    |    | |   |   | ▓▓        ▓ ◤◤ ■▚"
750 C$(18)="▚ ▓╱  * ╲   |    | |   | ╲_╱ ▓▓        ▓ ▀  ■▚"
760 C$(19)="▚                            ▓▓ ▀◤      ▓▓ ▓◤ * ■▚"
770 C$(20)="▚    ▓AND A HAPPY NEW YEAR                   ■▚"
780 C$(21)=C$(1):C$(23)=C$(1):C$(24)=C$(0)
790 C$(25)="▚  ▓╱   ╲   |    | |   |   | ▓▓           ◤▓ ▀ ■▚"
800 C$(26)="▚ ▓╱  * ╲   |    | |   | ╲_╱ ▓▓           ▀ ▓ ▀ ■▚"
810 C$(27)="▚                           ▓▓           ▀ ◤ ■▚"
820 C$(28)="▚                           ▓▓           ▀   ■▚":RETURN
830 POKESC,42:POKESC+54272,0:RETURN
840 DATA 1171,1180,1209,1301,1308,1331,1407,1472,1501,1521,1749,1821
850 DATA 8,147,20,11,114,20,11,114,8,12,216,8,11,114,8,10,205,8,9,159,20
860 DATA 9,159,20,9,159,20,12,216,23,12,216,8,14,107,8,12,216,8,11,114,8
870 DATA 10,205,20,8,147,20,8,147,20,14,107,23,14,107,8,15,70,8,14,107,8
880 DATA 12,216,8,11,114,20,9,159,20,9,159,20,8,147,20,11,114,20,10,205,20
890 DATA 11,114,50,160,250,185,0,4,153,0,200,185,250,4,153,250,200,185,244,5
900 DATA 153,244,201,185,238,6,153,238,202,185,0,216,153,232,203,185
910 DATA 250,216,153,226,204,185,244,217,153,220,205,185,238,218,153
920 DATA 214,206,200,192,250,208,203,96,173,211,2,170,160,1,32,186,255,169
930 DATA 5,162,238,160,2,32,189,255,166,253,164,254,169,251,32,216,255,96
940 DATA 1272,1275,1279,1392,1767

READY.
```

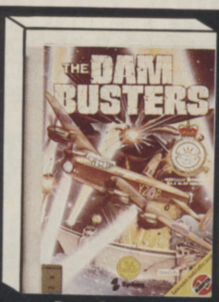
Top Games
AT ROCK BOTTOM PRICES

TAKE UP TO FIVE TITLES FROM JUST 95p


Frank Bruno
Spectrum £3.95
Com 64 £4.95
Amstrad £5.95


Finders Keepers
Spectrum £0.95
Com £0.95

Starion
Spectrum £5.95
Com 64 £6.95
Amstrad £6.95


Dam Busters
Spectrum £7.75
Commodore 64 £7.75

Dun Daragh
Spectrum £7.75
Amstrad £7.75

Red Arrows
Spectrum £5.50
Com 64 £6.95
Amstrad £5.95

Nodes of Yesod
Spectrum £6.95
Com 64 £6.95

Superman
Spectrum £7.45
Commodore 64 £7.45
Amstrad £7.45

Shadowfire
Spectrum £5.95
Commodore 64 £5.95

Spy Hunter
Spectrum £4.95
Com 64 £6.95

Hypersports
Spectrum £6.15
Com 64 £6.95

Way of the Fist
Spectrum £6.95
Com 64 £7.95
Amstrad £7.95

Spy v Spy
Spectrum £6.95
Commodore 64 £6.95
Amstrad £6.95

Alien 8
Spectrum £7.95
[redacted]
Amstrad £7.95

PLUS ONE OF THESE FREE!

Arcadia
Spectrum
Com 64

Cosmic Cruiser
Spectrum
Com 64

(Amstrad owners deduct £1 from your order instead)

INTRODUCTORY OFFER

Place an order for one of our Club magazines and you can take up to five of the titles listed above at the introductory "Bonus Price" plus one of the two Imagine titles illustrated absolutely free. A subscription to the magazine costs just £5.00 per annum and brings you six issues a year through the post. As a subscriber you will automatically be enrolled in our discount Software Club giving you the opportunity to make many more purchases at prices similar to the ones shown above. In addition to these top selling games, we stock over 700 titles for Spectrum, Commodore 64 and Amstrad computers. All titles are offered at a discount — you'll find many on which you can save £4-£5. Note, however, that even though you belong to the club we don't make you buy anything. There are no minimum purchase requirements, so your only commitment is the annual subscription to the Magazine. Hurry now and join over 10,000 members who are already enjoying Mr Software's low, low prices.

EXCELLENT VALUE

Mr Software's magazine is excellent value. Each issue contains twenty or thirty reviews of the latest software releases and on first joining you also receive a twenty-four page supplement reviewing a range of hardware and utility products (C-64 and Spectrum only at present). In every issue there is a competition to enter, a summary of how other magazines rate the new releases, game playing tips from our members, and one of our reviewers sums up his personal favourites of the month.

HOW TO ORDER

Choose up to five titles from the selection shown. Enter them on the order form below, choose your free game, then fill in the payment details and your name and address and post the form to us. By return you will receive your copy of "48K" or "64K" (depending which computer you have), followed shortly by the games you ordered. Hurry, though, the introductory offer expires 60 days from the publication date of this magazine.

KELVIN HOUSE, TOTTERIDGE
AVENUE, HIGH WYCOMBE,
BUCKS HP13 6XG
(0494) 450751

ORDER FORM CCI1285

My computer is a: ☐Spectrum ☐Commodore 64 ☐Amstrad

I wish to subscribe to your Magazine and take advantage of your "Introductory Bonus Price Offer." The titles I would like to buy are as follows:-

TITLE	PRICE

I would like as my free game:- ______

TOTAL: ______
Post & Packing: .75*
Subscription: £5.00*
GRAND TOTAL £ ______

I enclose a cheque/postal order no. ______
or
please charge my Access/Visa Card No
☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

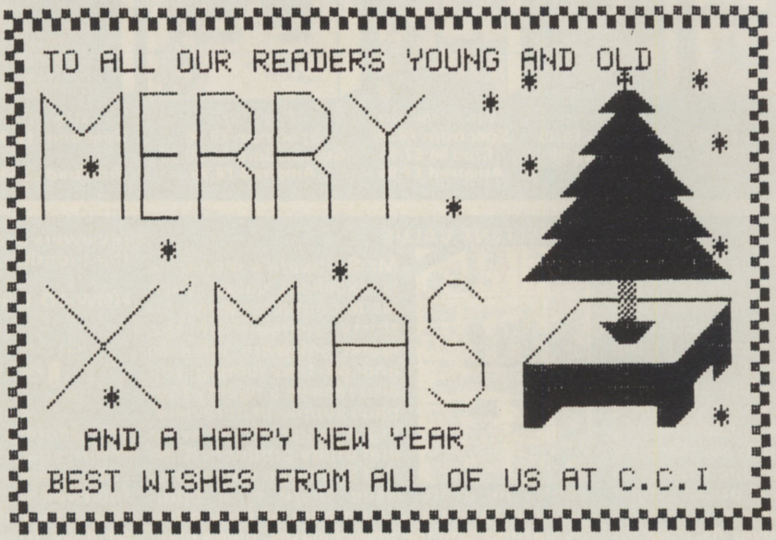
I understand that if I am not fully satisfied with the goods, I may return them within fourteen days for a full refund of the cost of the games and the Magazine subscription.

Name (BLOCK CAPS) ______

Address ______

*** Export Customers:-** We welcome orders from all parts of the world, please note the following subscription and postage rates outside UK:- Europe — Subscription £7.00. Post £2; U.S.A. and Middle East — Subscription £9, Post £3; Australia, Far East and South Africa — Subscription £12.00, Post £4. Please note that all Magazines are despatched by Air Mail postage to keep you right up to date.

```
5 REM   CARD.BOOT     (LISTING 2)
10 IFC=0THENC=1:PRINT"]":LOAD"CDATA",1,1:REM ** FOR DISK USE ,8,1 **
20 POKE53280,15:POKE53281,15:DIMCR(12),H(28),L(28),D(28):DF=12:REM ** SPEED **
30 C=0:FORL=0TO55:READD:POKE49152+L,D:NEXT:FORL=0TO11:READD:CR(L)=D+54272:NEXT
40 FORL=0TO28:READH(L),L(L),D(L):NEXT:FORL=0TO23:POKE54272+L,0:NEXT
50 POKE54296,15:POKE54284,18:POKE54285,64:SYS49152
60 FORL=0TO28:POKE54273,H(L):POKE54272,L(L):POKE54280,H(L):POKE54279,L(L)
70 POKE54283,17:POKE54276,49:POKE54277,10:POKE54278,59:FORDL=0TOD(L)*DF:NEXT
80 C=C+1AND(C<16):POKE53280,C:POKECR(INT(RND(1)*12)),C:POKE54276,48:NEXT:GOTO60
90 DATA 160,0,185,0,200,153,0,4,185,250,200,153,250,4,185,244,201,153,244,5
100 DATA 185,238,202,153,238,6,185,232,203,153,0,216,185,226,204,153,250,216
110 DATA 185,220,205,153,244,217,185,214,206,153,238,218,200,192,250,208,203,96
840 DATA 1171,1180,1209,1301,1308,1331,1407,1472,1501,1521,1749,1821
850 DATA 8,147,20,11,114,20,11,114,8,12,216,8,11,114,8,10,205,8,9,159,20
860 DATA 9,159,20,9,159,20,12,216,23,12,216,8,14,107,8,12,216,8,11,114,8
870 DATA 10,205,20,8,147,20,8,147,20,14,107,23,14,107,8,15,70,8,14,107,8
880 DATA 12,216,8,11,114,20,9,159,20,9,159,20,8,147,20,11,114,20,10,205,20
890 DATA 11,114,50,160,250,185,0,4,153,0,200,185,250,4,153,250,200,185,244,5

READY.
```



TO ALL OUR READERS YOUNG AND OLD

MERRY

X'MAS

AND A HAPPY NEW YEAR

BEST WISHES FROM ALL OF US AT C.C.I

If you have come across any useful hints and tips, why not share your knowledge with other CCI readers?

Or maybe you have written a program, either in Basic or Machine Code, that you feel is worthy of publication.

CCI welcomes contributions from readers. We will publish any suitable listings ... and pay you for it!

If you have something for publication, we require the program on cassette or disk, together with a printout of the listing and any additional information required.

Please enclose a S.A.E. if you wish to have your program returned to you.

The address to send it to is:

The Editor,
Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane,
London EC1R 0NE.

Don't forget, we welcome programs for the VIC and PETs as well as the 64.

· AIR · COMBAT · EMULATOR ·

· BY CASCADE GAMES ·

1-3 Haywra Crescent Harrogate

£10.95
INC. FREE WATCH AND POSTAGE

THE FASTEST GAME ON TWO WINGS!
AND A FREE MULTIFUNCTION CALCULATOR WATCH

ACE

The AIR COMBAT EMULATOR, packed with exciting features, is by far the fastest, most realistic flight simulator available. For the first time on a home computer, feel what it is **really** like to fly a high performance military jet and engage tanks, missiles, ships, helicopter gun-ships and two types of cunning intelligent enemy aircraft.

Featuring over 300 sprite images, ACE has the smoothest, most detailed cockpit view of hills, trees and other ground objects ever achieved thanks to specially developed Dynamic Graphic Technique (D.G.T.™) allowing sensational high speed **solid** 3D graphics.

In combat, your head will spin as you struggle with the help of the advanced avionics which include a rear-view camera and radar, to stay alive long enough to do some damage to the enemy.

The unique two seat flying option (pilot, navigator/weapons man) and **Synchro Speech**™ which passes vital aircraft condition information to the flight crew without freezing the action combined with dynamic tactical map, take offs and landings, summer, winter and night-time flying and a remarkably realistic in-flight refuelling option makes ACE the ultimate AIR COMBAT EMULATOR.

ACE SCENARIO

A vast invasion fleet has landed on your southern shores and discharged scores of tanks supported by helicopter gun-ships and protected by mobile surface to air missiles. Squadrons of enemy fighters give the enemy forces air cover. Advancing ruthlessly they are conquering your homeland, facing no opposition.

You are the last fighter pilot with only three A.C.E. Mark 2.1 multi role All Weather All Terrain AWAT™ combat aircraft. Based at an allied airbase, your task is to attack and destroy the numerically superior enemy land and air forces and drive them from your shores. The final stage of the conflict, having already destroyed the enemy land forces and shot down their air force, is to sink the enemy fleet as it evacuates its defeated army.

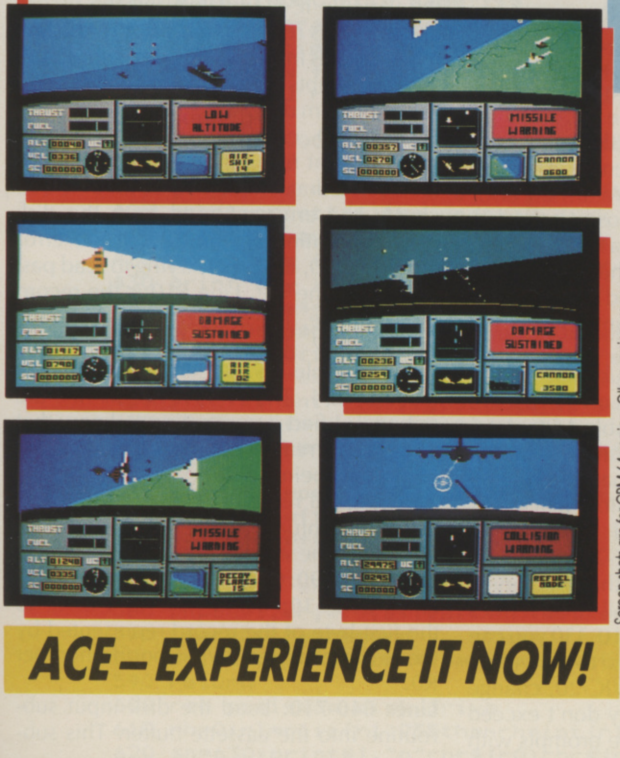
ACE – EXPERIENCE IT NOW

Every computer game fan will love ACE – just look at these features:-

- 100% optimized machine code uses all available memory.
- Featuring Dynamic Graphic Techniques (D.G.T.™)
- The smoothest, fastest and most detailed cockpit view of any flight simulation.
- Views of hills, trees, tanks and other ground objects. Aerial combat, ground attack and naval attack.
- **Synchro Speech**™ ie. the speech does not freeze the action.
- Two seat option – fly and fight with the aid of a friend.
- Sensational 3D solid (not boring wireframed) graphics.
- High score saving system.
- AWAT™ operation (All Weather All Terrain).

* Note due to memory limitations ACE on the C16 and VIC20 (+8K Ram) do not have any ground objects.

FREE 20 KEY MULTIFUNCTION CALCULATOR WATCH
• 12/24 Hour Time Mode • Alarm Mode
• Calendar Mode • Calculator Mode



Screen shots are for CBM 64 version. Other versions may vary.

ACE – EXPERIENCE IT NOW!

FREE!!!

Order ACE today and receive this fantastic
20 KEY MULTIFUNCTION CALCULATOR WATCH
ABSOLUTELY FREE!!!

PRICE **£10.95 (CBM 16 and VIC 20 £9.95)**

Postage FREE in U.K. Add £1 for overseas orders.
Allow 28 days for delivery.
I enclose cheque/postal order for (£.................................) made payable to Cascade Games Ltd.
Or through any Post Office by Transcash (Giro No. 655 6655).
For even faster ordering when charging to Access, Barclaycard and Trustcard Visa use our 24 hr service (Tel. 0423 504663).

ENTER CREDIT CARD NO. IN BOX:-

VISA

☐ C= 64
☐ C= PLUS 4
☐ AMSTRAD 464
☐ C= 16
☐ C= 128
☐ AMSTRAD 664
☐ C= VIC 20 (with 8K RAM expansion)
☐ SPECTRUM 48K

Please tick box

NAME ____________________
ADDRESS ____________________
____
POSTCODE ____________________
COUNTRY ____________________

Please complete and send to:-
Cascade Games Ltd.
1-3 Haywra Crescent
Harrogate HG1 5BG. England.
Tel. (0423) 504663
Registered No. 1755554

cascade

Relative Back-ups

Relative files cannot be copied with the usual utility programs. David Brooks follows his previous relative file features with a method of backing them up.

BASIC programs can be saved and, therefore, copied with the BASIC command SAVE. Generally, data files and machine language programs can't be duplicated this way; they require a special file-copying utility program. Several such utilities have been published in popular computing magazines and any Commodore user's club will have at least one on hand for its members' use.

Unfortunately, Commodore relative files cannot be copied with the usual utility programs. The reason is that for each relative file the Commodore Disk Operating System (DOS) maintains a separate file called the side sector file. It contains information about how file storage blocks were allocated on the disk as the relative file was being created. This information would be meaningless if copied to another disk. The catch is that you can't use a copy of your relative file without a side sector file.

The only really straightforward way to backup a relative file is to read it into memory (all at once if possible) and re-create the file on another disk, or under a different name on the same disk. Program RELBACKUP will do this for you. (See Listing 1.)

There are a couple of requirements for duplicating relative files that don't apply to other file types, First of all, you need to know how many bytes (characters) have been allocated to each record of the file you wish to copy. This information is required to open a new relative file for copying to. When you determine the character count, be sure to include the RETURN character that's normally included at the end of the record.

Second, it's useful, but not absolutely necessary, to know roughly how many records you want to copy. This value can also be used when the new file is created, to assign enough space for the new records. You don't have to get this number exactly right because the DOS will automatically create more records if it needs them while it's copying your file; it just takes it a little longer. If you've created the file you're copying, probably you will know how many characters are in the record, and you may at least be able to guess at how many records there are. But what if you don't know either of these facts about the file?

The appropriate file information is available from the disk directory. You may not be aware of it because it's not usually included in directory listings, I've included an option in RELBACKUP to read the disk directory and print out the necessary information for relative files. Unfortunately, the number of records written is not available; this must be estimated from the number of blocks used by the file.

There's only one more little detail: how does the program know when it's at the end of the file? The DOS will return an error number of 50 if you try to position the disk drive to read past the end of a file.

Here's an explanation of how RELBACKUP works. You should read the explanation especially if you want to use the program with a VIC-20.

Lines 10-360: Most of this part of the program gives user prompts on the screen. Line 30 sets up a string variable A$ for later use by the data input routine. Line 40 opens the disk command channel. Line 50 changes the background colour of a monitor to black. You should eliminate or modify this line for a VIC-20. Line 210 gives you a chance to read the directory to obtain information about all relative files on the disk. Then, in lines 310-330 you can give appropriate responses to the input prompts. If you're using a VIC-20, change these input prompts so they don't exceed 20 characters or replace the prompts with Prints and unprompted Inputs.

Lines 370-380: These two lines determine how much of a file you will try to fit in memory at one time. On the VIC-20 you will have to adjust the 30000 to fit your available memory. RELBACKUP occupies about 4500 bytes as it's given in Listing l.

Lines 390-540: These lines contain the main part of the copy program. First you are prompted to insert the copy-from disk. The copy-from file is opened as file number 2 in line 450. Three important variables are initialized in line 460. IN is the record counter for records currently in memory. IP is the total record counter. IJ is a flag that causes a new relative file to be created when all old records are in memory or the first time the allocated memory space for old records is filled.

The subroutine called at 720 is where the records are written into a new file. Line 480 takes care of the case where there are more records left to be copied. After writing the records currently in memory, the variable IP is updated and the record counter IN is reset to zero prior to reading more records into memory. The subroutine at 970 prompts for a disk swap to return to the copy-from disk.

Line 490 calls the disk positioning subroutine at 600. The variable R1 is the first record that will be written to. Line 500 checks the error returned from the disk error subroutine at line 550. If the error number is 50, the disk is trying to read past the end of the file. Line 510 is the record input routine. The SYS828 takes the place of INPUT#2. The record is read into the string variable A$. Its length is stored in location 254. The PRINTs in this line are optional; I find it comforting to know that things are really happening when the records are being read!

The actual record to be stored in memory and eventually written on the new file is stored in the string array X$.

Lines 550-590: Check for disk errors.

Lines 640-630: Position the disk drive to the first byte of the record represented by the low/high bytes RL/RH on file number R0.

Lines 640-710: Load the disk input subroutine into the cassette buffer. This subroutine assumes that the file to be read from is number 2.

Lines 720-870: Write data on the new file. First close the old file. Then load the copy-to disk. If this is the first entry to this subroutine, IJ will be 0 and a new relative file will be created in the subroutine at 880 according to the information you have previously specified. On return from this subroutine, the flag IJ is set to 1 so the file-creation subroutine will not be called again.

Lines 810-850 write records on the new file. Before each write operation, the disk is positioned to record I+IP on file number 3. Line 840 is optional.

Lines 880-960: Create a new relative file according to information you've specified.

Lines 970-1030: Prompt for a disk swap to return to the copy-from disk. Open file number 2 on the copy-from disk.

Lines 1040-1390: Read the disk directory and extract information about relative files. Opening a file with the name "#" opens a buffer area for storing information read with the User commands. The idea here is to read the information for each directory entry. There are eight such entries in each sector of the directory track (track 18), starting at sector 1. The file name is in bytes 3 through 18 (the 4th through 19th bytes, since the bytes are numbered starting at 0). The file type is in byte 0; its decimal value is 132 for relative files.

The relative file record size is in byte 21. The number of blocks in the file, including the side sector file, is stored in low/high byte format in bytes 28 and 29. The number of records on the file can be estimated (slightly overestimated, actually) by multiplying the number of blocks used by 254, the number of data bytes in one block, and dividing the result by the number of bytes in each record. (See line 1280).

```
10 rem program name relbackup
20 rem david r. brooks, july 84
30 a$="12345678901234567":a$=a$+a$+a$:a$=a$+a$+a$+a$+a$
40 open1,8,15:rem open disk command channel
50 poke53280,0:poke53281,0
60 print"{SC}"
70 print"          {RV}relative file backup{RO}":print
80 print"this program creates a duplicate of a"
90 print"relative file.  before you proceed, you"
100 print"need to know how many characters there"
110 print"are per record, including the {RV}return{RO},"
120 print"and the approximate number of records"
130 print"in the file.  if you don't know these"
140 print"values you will have a chance to access"
150 print"a subroutine that will give you the"
160 print"characters per record and an estimate"
170 print"of the number of records."
180 print:print"proceed (y) or get information
190 print"from directory. (insert appropriate"
200 print"disk and press anything but y.)"
210 getz$:ifz$=""then210
220 ifz$<>"y"thengosub1040
230 print"{SC}"
240 print"now you need to provide information"
250 print"about the file you wish to copy."
260 print"you must know the total number of"
270 print"characters per record, including the"
280 print"{RV}return{RO} character at the end of the"
290 print"record, and an estimate of the number"
300 print"of records in the file."
310 print:input"file name";f$
320 input"characters per record";r
330 input"estimated number of records";n
340 print"new file name - must be different if"
350 print"you're going to copy it on the same disk"
360 inputg$
370 d=int(30000/r):rem alter this to suit vic-20 memory
380 dim x$(d)
390 gosub640:rem enable get# subroutine
400 print:print"if the program disk is still in place,"
410 print"remove it and insert disk containing"
420 print"the file you wish to copy.  press"
430 print"any key when ready..."
440 getz$:ifz$=""then440
450 sn=470:open2,8,2,f$:gosub550:rem open old file
460 in=0:ip=0:ij=0:rem initialize record index and new file opening flag
470 in=in+1:rem advance record index
480 ifin>dthenin=in-1:gosub720:ip=ip+in:in=0:gosub970:goto470
490 r0=2:r1=in+ip:gosub600
500 ifer=50thenin=in-1:print"{RV}eof{RO}":gosub720:print"{RV} end program {RO}":
close1:end
510 sys828:l=peek(254):print"length";l;left$(a$,l):rem input subroutine
520 ic=asc(left$(a$,1))
530 x$(in)=left$(a$,l)
540 goto470
550 rem disk error checking
560 input#1,er,er$,e1,e2:ifer<20thenreturn
570 ifer=50thenreturn
580 print"disk error from statement ";sn:printer;er$:closer0:close1:stop
590 return
600 rem position disk drive
610 rh=0:rl=r1:ifr1>255thenrh=int(r1/256):rl=r1-256*rh
620 sn=630:print#1,"p"chr$(r0)chr$(rl)chr$(rh)chr$(1):gosub550
```

```
630 return
640 rem poke get# subroutine to cassette buffer
650 forj=828to840:readx:pokej,x:nextj
660 data160,2,177,45,153,249,0,200,192,6,208,246,162
670 poke841,2
680 forj=842to865:readx:pokej,x:nextj
690 data32,198,255,32,228,255,201,13,240,11,164,254,145,252,200,132,254,196
700 data251,208,238,76,204,255
710 return
720 rem write x$() on new rel file
730 close2:rem close old file
740 print
750 print"remove the current disk and insert the"
760 print"disk you want to copy the file to."
770 print"press any key when ready"
780 getz$:ifz$=""then780
790 ifij=0thengosub880:ij=1:rem create new file and reset flag
800 sn=810:open3,8,3,g$:gosub550
810 fori=1toin
820 r1=i+ip:r0=3:gosub600:rem position disk drive
830 sn=860:print#3,x$(i):gosub550
840 print"record";r1;" = ";x$(i)
850 next
860 close3
870 return
880 rem create new relative file
890 open3,8,3,g$+",l,"+chr$(r):gosub550
900 print"a new relative file named ";g$;" is"
910 print"being created..."
920 sn=910:print#1,"p"chr$(3)chr$(1)chr$(0)chr$(1):gosub550
930 rl=n:rh=0:ifrl>255thenrh=int(rl/256):rl=rl-256*rh
940 sn=930:print#1,"p"chr$(3)chr$(rl)chr$(rh)chr$(1):gosub550
950 close3
960 return
970 rem disk swap
980 print:print"remove copy to disk and replace with"
990 print"copy from disk.  press any key when"
1000 print"ready"
1010 getz$:ifz$=""then1010
1020 open2,8,2,f$:r0=2:gosub550
1030 return
1040 open2,8,2,"#":r0=2:gosub550
1050 dim b$(30)
1060 print"{SC}reading disk directory...":print
1070 t=18:s=1:rem select directoy track and sector
1080 print#1,"u1:2,0";t;s:gosub550:rem read t$s into buffer
1090 print#1,"b-p:2,0":gosub550:rem position to 1st byte in buffer
1100 get#2,a0$,a1$:rem read t&s continuation bytes
1110 ifa0$=""thena0$=chr$(0)
1120 ifa1$=""thena1$=chr$(0)
1130 n0=asc(a0$):n1=asc(a1$)
1140 print
1150 print"                      char"
1160 print"                      per         est"
1170 print"relative file name    rec  blocks recs"
1180 print"--------------------------------------"
1190 fori=1to8:fork=1to30
1200 get#2,b$(k):ifb$(k)=""thenb$(k)=chr$(0)
1210 next
1220 n$="":fork=4to19:n$=n$+b$(k):next:rem copy file name
1230 ifasc(n$)=0thenprint:print"no more files":goto1370
1240 as=asc(b$(1)):ifas=0thenas=128
1250 ifas=132thenprintn$"  ";:rem print if relative file
1260 ch=asc(b$(22)):bl=asc(b$(30))*256+asc(b$(29))
1270 ifas=132thenprint"   "ch;"  "bl;
1280 ifch>0andas=132thenprint"  "int(bl*254/ch);
1290 print
1300 get#2,z$,z$:rem skip 2 unused bytes
1310 next
1320 ifn0=0then1370
1330 s=n1:print:print"press {RV}return{RO} to see more, anything else for
1340 getz$:ifz$=""then1340
1350 ifz$<>chr$(13)then1390
1360 goto1080
1370 print"press any key to return"
1380 getz$:ifz$=""then1380
1390 close2:return
```

SJB DISKS LIMITED

BLANK DISKS

Top Quality 5¼″ Bulk Packed Disks

Supplied in 10's with a **FREE** Plastic Library Case, Labels etc.

	Single Sided (40/80 Track)	**Double Sided (40/80 Track)**
10 – 5¼″ Disks (With a **FREE** Plastic Library Case)	**£13.95**	**£17.95**
50 – 5¼″ Disks (With a **FREE** Perspex Storage Box)	**£59.95**	**£79.95**

★ LIFETIME WARRANTY ★

★ FREE FAST DELIVERY ★

All prices are **inclusive** of V.A.T.

Delivery .... **FREE throughout the U.K.**

3″ & 3½″ Disks also available

Bulk Orders, Trade Enquiries & Educational Enquiries Welcome

Access

VISA

Please Send Cheques/Postal Orders to:-

SJB DISKS LIMITED **(Dept CC)**

11 Oundle Drive, Nottingham, NG8 1BN

Telephone (0602) 782310

SJB

VIC takes Tinymon

Mike Hart has packaged Jim Butterfield's machine language monitor enabling it to be typed directly into an unexpanded VIC

Neither the VIC-20 nor the 64 have a machine language monitor although this was contained in almost all of the old PETS and is also present in the newer C-16 and the PLUS 4. A monitor has been written for the VIC by Jim Butterfield and this was originally published in 1982 in VIC COMPUTING. However, the author advised VIC owners to borrow a friend's PET and use the machine language monitor on that in order to get a compact version of the listing into a machine so that it could be saved.

The problem really boils down to a lack of space in the unexpanded VIC as the monitor itself takes about 800 or so bytes, and more than 1K with its own loader. A normal BASIC loader will more than gobble up the remaining 2.5K that remains if the loader and the monitor are not to conflict with each other – hence the lack of space.

However I felt that not many VIC owners are likely to know PET owners and may feel that they lack the confidence to put the program into a 64 and then adapt it. Accordingly, I have taken Jim Butterfield's original program and packaged it in such a way that owners of the unexpanded VIC can type the program directly into their own machines and then save a copy of it for everyday use. Actually *two* versions are given here of which one is a decimal loader (in two parts) and the other is a highly condensed hex loader. Both assume a completely cold and 'bare' ie non-expanded VIC so remove any extra memory, add-ons or cartridges.

Decimal Loader

The procedure here is as follows:

1. Raise the bottom-of-memory pointers by the following command in direc mode:
   POKE 5139,0: POKE 43,20: POKE 44,20: NEW
2. Now type in TINYMON/1 and save it. Do the same with TINYMON/2 and save that also
3. It is quite likely that you will make some mistakes in a program of this size. However there is a checksum at the end of every two lines and if this agrees then you have probably entered the line correctly. Note that this is not infallible as you may have entered two numbers in the wrong order which still add up to the correct checksum. However if the checksum does *not* agree then you have certainly made a mistake.
4. When you have got a TINYMON/1 and a TINYMON/2 that do not generate any errors and report a successful load then:
   Make sure that you have raised the bottom-of-memory pointers ie Step 1 and then enter TINYMON/1 and RUN it and then immediately enter TINYMON/2 and run that also.
5. If you now LIST the program you will see that the bottom of memory has been restored and you now have a copy of SUPERMON residing at the normal start of memory ie 4096 onwards. Just SAVE this under your own title (e.g. TINYMON). When RUN, this program uses its own machine code relocater to put itself at the top of available memory and then protect itself before entering into the monitor itself. Typing X and RETURN returns you to BASIC.

Hex Loader

The hex loader is very much more compact – in fact every single byte is critical. That is the explanation why the title in the REM statement in line 1 is so cryptic. There is just not enough space for the program not to generate out-of-memory errors if we were to make this REM statement longer. You may wish to remove it altogether. As you type in the program do not leave any spaces anywhere – particularly not between the word DATA and the start of the data string in lines 10-38. The procedure is:

1 Raise the bottom-of-memory pointers exactly as with the decimal loader with the statement in direct mode:
POKE 5139,0: POKE 43,20: POKE 44,20: NEW

2. Type in the program as carefully as possible. You will probably find it helpful to cover the data statements with a sheet of plain paper and slowly move them across in groups of two. SAVE the program before running it.
3. When you RUN the program then a checksum will be reported on the screen for each line. The checksum is also reproduced here for your convenience. If the checksum agrees for any particular line then the odds are that you have it right but it does not guarantee faults of the transposition type (eg typing 0064 instead of 6400) If the checksum disagrees then you *have* made a mistake!)
4. If after RUNNING the program all the checksums appear to agree then type the following in direct mode:
   POKE 43,1: POKE 44,16: POKE 45,20: POKE 46,20: CLR
5. Now LIST the program to make sure that you have TINYMON at the bottom of memory and SAVE with a simple SAVE-"TINYMON" (onto tape). At this point you may either RUN TINYMON or make further copies of it.

What happens when you run TINYMON?

TINYMON is really three little programs in one. The first is a small BASIC program which announces the name and author and then accesses a machine code location. This second program is a relocating loader which takes TINYMON proper, locates it at the top of memory in whatever configuration you have recalculating soubroutine addresses as it goes and then finally resets the top of memory pointers to ensure that it does not get overwritten. Once loaded, TINYMON is present until you turn off or reset the VIC. On running TINYMON you will automatically enter the monitor – to return to BASIC then type .X (RETURN)

To access TINYMON you have to access any location that is known to contain a zero and then SYS that location. Location

THE 64 SOFTWARE CENTRE
1 Princteton Street, London WC1
01-430 0954

STRATEGIC SIMULATIONS

d = disk c = cassette

TIGERS IN THE SNOW	d	£17.95
BATTLE FOR NORMANDY	d	£17.95
BATTLE FOR NORMANDY	c	£17.95
GERMANY 1985	d	£59.95
RDF 1985	d	£44.95
BALTIC 1985	d	£44.95
BREAKTHROUGH IN THE ARDENNES	d	£64.95
OPERATION MARKET GARDEN	d	£64.95
FIELD OF FIRE	d	£44.95
GEOPOLITIQUE	d	£44.95
IMPERIUM GALACTUM	d	£64.95
KAMPFGRUPPE	d	£64.95
MECH BRIGADE	d	£64.95
COLONIAL CONQUEST	d	£44.95
CARRIER FORCE	d	£64.95
RINGSIDE SEAT	d	£44.95
WINGS OF WAR	d	£44.95
50 MISSION CRUSH	d	£44.95
RAILS WEST	d	£49.95
PRESIDENT ELECT	d	£44.95
QUESTION	d	£49.95
GEMSTONE WARRIOR	d	£44.95
PHANTASIE	d	£49.95
PROFESSIONAL TOURNAMENT GOLF	d	£44.95
COSMIC BALANCE	d	£44.95
COMBAT LEADER	c	£14.95
FIGHTER COMMAND	d	£64.95
BATALLION COMMANDER	d	£44.95
PANZER GRENADIER	d	£44.95
SIX GUN SHOOT OUT	d	£44.95
SSG		
GOLAN FRONT	d	£64.95
INFOCOM		
ENCHANTER	d	£49.95
SORCERER	d	£59.95
CUTTHROATS	d	£39.95
SEASTALKER	d	£39.95
HITCHHIKERS GUIDE TO THE GALAXY	d	£39.95
THE WITNESS	d	£44.95
DEADLINE	d	£11.99
ZORK I	d	£11.99
ZORK III	d	£11.99
SUSPENDED	d	£11.99

ALL IN STOCK NOW!

Prices incl. VAT. Add £2.00 p&p per item

4096 will contain a zero at the start of Basic in the unexpanded VIC and so SYS 4096 will do. Personally, I prefer SYS 8 which always seems reliable and is always zero when you are in 'direct mode'.

Tinymon Commands

These are fairly rudimentary but they are all that can be accommodated within the 800 bytes that TINYMON occupies. When you have entered the monitor you will find the cursor flashing next to a . sign and this is to signify that a monitor command is awaited.

.R **display 6502 registers**
You can use the screen editor to change the contents of the registers if you wish

.M FFFF TTTT **display memory (from...to)**
Numbers should be displayed in hex and entered the same way.
To view the start of BASIC then type .M 1000 1050
Memory contents may be changed by using the screen editor.

.X **Exit to BASIC**
Some programmers nearly always do a CLR to ensure that the VIC's pointers are consistent but I have never found the need for it

.G AAAA **GOTO (execute) address**
If you had a small machine code routine located at $033C then you would run it by .G 033C. If you want to access a ROM error routine then try .G D97E and you should get an OVERFLOW ERROR message printed.

.S"PPPP", 01, FFFF, TTTT **Save (from..to)**
In this command you need to know the start and end address *plus one* in hex. The monitor will not save the last byte and hence you need to make the last address your end address +1. Note that the 01 is the device number and is 01 for tape but would be 08 for disk. If you are saving a BASIC program using TINYMON then it is best to load it back via the monitor or else to load it from BASIC in direct mode with a LOAD "PROGRAM", 1,1 command i.e. if you forget the put the second parameter for an absolute load then the first line of the program is likely to be corrupted – tolerable if this is a REM and you can delete the garbage but not otherwise.

.L "PPPP" **Loads (program name)**
If there is no number after the name then it defaults to tape. To load from disk then use .L "PPPP",08

As you can see TINYMON is only an introduction to the world of hex and machine language programming. However it does get you off to quite a good start and once you have TINYMON up and running in your machine then it is possible to put in much bigger monitors such as SUPERMON. But first you have to have a monitor in order to load it in . . .

Although TINYMON will take you a certain amount of time to type in and get up and running I think you will find that it is time well spent – it enables you to access the inner workings of your VIC and to enter the world of machine language programming which is the obvious next step from BASIC.

And now a final tip if you find that you have to reset the machine with a RESTORE or a hardware RESET – in the unexpanded VIC with nothing else but TINYMON at the top of memory, SYS 6919 will restore it for you!

```
                    TM#   CHECKSUMS

      READY.

       10           1902             25           4216
       11           2744             26           3813
       12           3401             27           4137
       13           3791             28           4512
       14           4339             29           4326
       15           3175             30           4293
       16           2885             31           3933
       17           4101             32           3855
       18           5114             33           5165
       19           4612             34           5057
       20           4736             35           5519
       21           4433             36           5627
       22           4543             37           2938
       23           3761             38           3900
       24           2440
                                     READY.
```

OR... MADE BY ALIEN

Studio Schaap

THE FINAL CARTRIDGE®

THE FIRST OUTSIDE OPERATING SYSTEM FOR THE CBM 64

This new operating system built in a cartridge does not use any memory and is always there. Compatible with 98% of all programs.

Features:

- **DISK TURBO** - 6 times faster disk access - loading and saving.
- **TAPE TURBO** - 10 times faster, even with files - normal Commodore commands - compatible with standard turbo's.
- **ADVANCED CENTRONICS INTERFACE** - compatible with all the well-known centronics printers and Commodore printer programs. Prints all the Commodore graphics and control codes (important for listings).

  Advanced screen-dump facilities. Prints Low-Res, Hi-res and Multicolour. Full page!!! Even from games and paint-programs, like Doodle, Koala Pad etc. Searches automatically for the memory-address of the picture.
- **24K EXTRA RAM FOR BASIC-PROGRAMS AVAILABLE**: Two new commands ,,Memory read'', ,,Memory write''. They move 192 bytes with machinelanguage-speed anywhere in the 64K Ram of the CBM 64. Can be used with strings and variables.
- **BASIC 4.0 COMMANDS** - like Dload, Dsave, Dappend, Catalog, etc.
- **BASIC TOOLKIT** - with Auto, Renum (incl. Goto and Gosub), Find, Help, Old, etc.
- **PREPROGRAMMED FUNCTION KEYS**: - Run, Load, Save, Catalog, Disk commands, List (removes all list-protections).
- **KEYBORD EXTRA'S** - Allows you to delete part of a line; stop and continues listings; move cursor to lower-lefthand corner. Pokes and Syscalls in Hex. Typ-command operates your printer as a typewriter.
- **COMFORTABLE EXTENDED ML. MONITOR**: - with relocated load scrolling up and down. Bankswitching, etc.
- **RESET SWITCH**: - resets to monitor; resets with old, resets to Hi-Res printing; resets every protected program.

ON/OFF SWITCH - we hope you never need that one.

12 Months replacement guarantee.

14 Days money back guarantee if you are dissatisfied.

SPECIAL INTRODUCTORY PRICE

FOR ONE **£ 50,-**

FOR TWO **£ 37,-** each

FOR THREE OR MORE **£30,-** each

Don't wait for your friends
ORDER ONE NOW!!!
Just pay the difference if you reorder within a month.

H&P COMPUTERS

U.K. ORDERS Barclays and Accescards or Cheques should be made out to:
H & P Computers, 9 Hornbeamwalk
Witham Essex CM8 2 SZ England.
Telephone: 0376 - 511471.

copyright and registered trademark H&P computers Wolphaertsbocht 236
3083 MV Rotterdam Netherlands Tel.: 01031 10231982 Telex 26401 a intx nl

```
1 REM TINYMON/1
10 S=4096:FOR J=101 TO 154 STEP 2:T=0:FOR K=1 TO 20:READ X
20 POKE S,X:S=S+1:T=T+X:NEXT:READ C:IF T=C THEN 40
30 PRINT"ERROR-LINES"J"-"J+1:END
40 NEXT:PRINT"TINYMON/1 LOADED":END
101 DATA 0,24,16,100,0,153,34,147,17,17
102 DATA 18,29,29,29,32,84,73,78,89,77,1046
103 DATA 79,78,32,0,49,16,110,0,153,34
104 DATA 17,32,74,73,77,32,66,85,84,84,1175
105 DATA 69,82,70,73,69,76,68,34,0,76
106 DATA 16,120,0,158,40,194,40,52,51,41,1329
107 DATA 170,50,53,54,172,194,40,52,52,41
108 DATA 170,48,55,56,41,0,0,0,234,234,1716
109 DATA 165,45,133,34,165,46,133,35,165,55
110 DATA 133,36,165,56,133,37,160,0,165,34,1895
111 DATA 208,2,198,35,198,34,177,34,208,60
112 DATA 165,34,208,2,198,35,198,34,177,34,2239
113 DATA 240,33,133,38,165,34,208,2,198,35
114 DATA 198,34,177,34,24,101,36,170,165,38,2063
115 DATA 101,37,72,165,55,208,2,198,56,198
116 DATA 55,104,145,55,138,72,165,55,208,2,2091
117 DATA 198,56,198,55,104,145,55,24,144,182
118 DATA 201,191,208,237,165,55,133,51,165,56,2623
119 DATA 133,52,108,55,0,0,0,0,0,0
120 DATA 0,0,191,120,173,254,255,0,174,255,1770
121 DATA 255,0,141,22,3,142,23,3,169,128
122 DATA 32,144,255,88,0,0,104,133,5,104,1751
123 DATA 133,4,104,133,3,104,133,2,104,133
124 DATA 1,104,133,0,0,186,134,6,56,165,1638
125 DATA 1,233,2,133,1,165,0,0,233,0
126 DATA 0,133,0,0,32,178,254,0,162,66,1593
127 DATA 169,42,32,219,253,0,169,82,208,28
128 DATA 169,63,32,210,255,32,178,254,0,169,2564
129 DATA 46,32,210,255,169,0,0,133,39,32
130 DATA 64,254,0,201,46,240,249,201,32,240,2443
131 DATA 245,162,7,221,230,255,0,208,18,133
132 DATA 28,138,10,170,189,238,255,0,133,193,2833
133 DATA 189,239,255,0,133,194,108,193,0,0
134 DATA 202,16,230,76,75,253,0,32,189,253,2637
135 DATA 0,144,248,32,238,253,0,32,189,253
136 DATA 0,144,240,32,238,253,0,32,76,254,2658
137 DATA 0,240,31,32,178,254,0,162,46,169
138 DATA 58,32,219,253,0,32,197,253,0,169,2325
139 DATA 5,32,111,254,0,165,195,197,193,165
140 DATA 196,229,194,176,223,76,80,253,0,76,2820
141 DATA 80,253,0,32,254,253,0,133,193,134
142 DATA 194,96,165,194,32,204,253,0,165,193,2828
143 DATA 72,74,74,74,74,32,228,253,0,170
144 DATA 104,41,15,32,228,253,0,72,138,32,1966
145 DATA 210,255,104,76,210,255,24,105,246,144
146 DATA 2,105,6,105,58,96,162,2,181,192,2538
147 DATA 72,181,194,149,192,104,149,194,202,208
148 DATA 243,96,32,13,254,0,144,7,170,32,2636
149 DATA 13,254,0,144,1,96,76,75,253,0
```

```
150 DATA 169,0,0,133,42,32,64,254,0,201,1807
151 DATA 32,240,249,32,32,254,0,144,23,32
152 DATA 64,254,0,201,48,144,16,32,53,254,2104
153 DATA 0,6,42,6,42,6,42,6,42,5
154 DATA 0,0,0,0,0,0,0,0,0,0,197
```

```
1 REM TINYMON/2
10 S=4626:FOR J=154 TO 205 STEP 2:T=0:FOR K=1 TO 20:READ X
20 POKE S,X:S=S+1:T=T+X:NEXT:READ C:IF T=C THEN 40
30 PRINT"ERROR-LINES"J"-"J+1:END
40 NEXT:PRINT"TINYMON/2 LOADED"
50 POKE 4096,0:POKE 43,1:POKE 44,16:POKE 45,20:POKE 46,20:CLR:END
154 DATA 42,133,42,56,96,201,58,8,41,15
155 DATA 40,144,2,105,8,96,32,207,255,201,1782
156 DATA 13,208,248,104,104,76,80,253,0,165
157 DATA 145,201,254,208,5,8,32,204,255,40,2603
158 DATA 96,32,97,254,0,44,45,145,48,248
159 DATA 96,32,76,254,0,208,8,169,3,133,1988
160 DATA 154,169,0,0,133,153,96,133,30,160
161 DATA 0,0,32,175,254,0,177,193,32,204,2095
162 DATA 253,0,32,164,254,0,198,30,208,241
163 DATA 96,32,13,254,0,144,11,162,0,0,2092
164 DATA 129,193,193,193,240,3,76,75,253,0
165 DATA 32,164,254,0,198,30,96,169,2,133,2433
166 DATA 193,169,0,0,133,194,169,5,96,230
167 DATA 193,208,6,230,194,208,2,230,39,96,2595
168 DATA 169,32,44,169,13,76,210,255,162,0
169 DATA 0,189,208,255,0,32,210,255,232,224,2735
170 DATA 22,208,245,32,178,254,0,162,46,169
171 DATA 59,32,219,253,0,165,0,0,32,204,2280
172 DATA 253,0,165,1,32,204,253,0,32,153
173 DATA 254,0,32,111,254,0,76,80,253,0,2153
174 DATA 32,254,253,0,133,1,134,0,0,32
175 DATA 153,254,0,133,30,32,131,254,0,208,2034
176 DATA 251,240,234,32,189,253,0,169,5,133
177 DATA 30,32,131,254,0,208,251,240,220,32,2904
178 DATA 207,255,201,13,240,7,32,189,253,0
179 DATA 133,1,134,0,0,166,6,154,165,0,2156
180 DATA 0,72,165,1,72,165,2,72,165,3
181 DATA 166,4,164,5,64,120,166,6,154,108,1674
182 DATA 2,192,76,75,253,0,160,1,132,186
183 DATA 132,185,136,132,183,132,144,132,147,169,2569
184 DATA 2,133,188,169,64,133,187,32,207,255
185 DATA 201,32,240,249,201,13,240,26,201,34,2807
186 DATA 208,217,32,207,255,201,34,240,38,201
187 DATA 13,240,11,145,187,230,183,200,192,16,3050
188 DATA 240,197,208,234,165,28,201,76,208,226
189 DATA 169,0,0,32,213,255,32,88,254,0,2826
```

```
190 DATA 165,144,41,16,208,240,76,80,253,0
191 DATA 32,207,255,201,13,240,226,201,44,208,2850
192 DATA 240,32,13,254,0,41,15,240,211,201
193 DATA 3,240,250,133,186,32,207,255,201,13,2767
194 DATA 240,202,201,44,208,230,32,189,253,0
195 DATA 32,207,255,201,44,208,244,32,254,253,3329
196 DATA 0,133,174,134,175,32,207,255,201,32
197 DATA 240,249,201,13,208,236,165,28,201,83,2967
198 DATA 208,248,32,178,254,0,169,1,133,185
199 DATA 32,130,246,76,80,253,0,13,32,32,2302
200 DATA 32,80,67,32,32,83,82,32,65,67
201 DATA 32,88,82,32,89,82,32,83,80,77,1249
202 DATA 82,88,71,58,59,76,83,134,253,0
203 DATA 183,254,0,35,255,0,0,255,0,244,2130
204 DATA 254,0,225,254,0,45,255,0,45,255
205 DATA 0,27,253,0,0,0,0,0,0,0,1613
READY.
```

```
TM#

1 REM TM#
2 S=4096:FORJ=1TO29:T=0:READA$:FORK=1TO36:P=2*K-1:GOSUB4:D=L
3 P=P+1:GOSUB4:POKES,L+D*16:T=T+PEEK(S):S=S+1:NEXTK:PRINT9+J,T:NEXTJ:END
4 L=ASC(MID$(A$,P)):L=L-48+(L>64)*7:RETURN
10 DATA001810640099229311111121D1D1D2054494E594D4F4E200031106E009922 11204A494D20
11 DATA42555454455524649454C4422004C1078009E28C228343329AA323536ACC228343429AA30
12 DATA37382900000EAEAA52D8522A52E8523A5378524A5388525A000A522D002C623C622B122
13 DATAD03CA522D002C623C622B122F0218526A522D002C623C622B122186524AAA526652548A5
14 DATA37D002C638C637689 1378A48A537D002C638C637689137 1890B6C9BFD0EDA5378533A538
15 DATA85346C370000000000000000BF78ADFEFF00AEFFFF008D16038E1703A9802090FF580000
16 DATA688505688504688503688502688501688500008A860638A501E9028501A50000E9000085
17 DATA000020B2FE00A242A92A20DBFD00A952D01CA93F20D2FF20B2FE00A92E20D2FFA9000085
18 DATA272040FE00C92EF0F9C920F0F5A207DDE6FF00D012851C8A0AAABDEEFF0085C1BDEFFF00
19 DATA85C26CC10000CA10E64C4BFD0020BDFD0090F820EEFD0020BDFD0090F020EEFD00204CFE
20 DATA00F01F20B2FE00A22EA93A20DBFD0020C5FD00A905206FFE00A5C3C5C1A5C4E5C2B0DF4C
21 DATA50FD004C50FD0020FEFD0085C186C260A5C220CCFD00A5C1484A4A4A4A20E4FD00AA6829
22 DATA0F20E4FD00488A20D2FF684CD2FF1869F69002690669 3A60A202B5C048B5C295C06895C2
23 DATACAD0F360200DFE009007AA200DFE00900 1604C4BFD00A90000852A2040FE00C920F0F920
24 DATA20FE0090172040FE00C93090102035FE00062A062A062A062A052A852A3860C93A08290F
25 DATA2890026908602 0CFFFC90DD0F868684C50FD00A591C9FED0050820CCFF2860206 1FE002C
26 DATA2D9130F860204CFE00D008A903859AA90000859960851EA0000020AFFE00B1C120CCFD00
27 DATA20A4FE00C61ED0F160200DFE00900BA200081C1C1C1F0034C4BFD0020A4FE00C61E60A9
28 DATA0285C1A9000085C2A90560E6C1D006E6C2D002E62760A9202CA90D4CD2FFA20000BDD0FF
29 DATA0020D2FFE8E016D0F520B2FE00A22EA93B20DBFD00A5000020CCFD00A50120CCFD002099
30 DATAFE00206FFE004C50FD0020FEFD00850 18600002099FE00851E2083FE00D0FBF0EA20BDFD
31 DATA00A905851E2083FE00D0FBF0DC20CFFFC90DF00720BDFD00850 1860000A6069AA5000048
32 DATAA50148A50248A503A604A4054078A6069A6C02C04C4BFD00A00184BA84B98884B7849084
33 DATA93A90285BCA94085BB20CFFFC920F0F9C90DF01AC922D0D920CFFFC922F026C90DF00B91
34 DATABBE6B7C8C010F0C5D0EAA51CC94CD0E2A9000020D5FF2058FE00A59029 10D0F04C50FD00
35 DATA20CFFFC90DF0E2C92CD0F0200DFE00290FF0D3C903F0FA85BA20CFFFC90DF0CAC92CD0E6
36 DATA20BDFD0020CFFFC92CD0F420FEFD0085AE86AF20CFFFC920F0F9C90DD0ECA51CC953D0F8
37 DATA20B2FE00A90185B92082F64C50FD000D2020205043202053522041432058522059522053
38 DATA504D5258473A3B4C5386FD00B7FE0023FF0000FF00F4FE00E1FE002DFF002DFF001BFD00
READY.
```

THE 64 SOFTWARE CENTRE
1 Princteton Street, London WC1
01-430 0954

SOFTWARE PRICE LIST — Prices include VAT

d = disk c = cassette r = cartridge

Accounting systems (Office use)

Anagram Systems — Sales Ledger	d	£75.00
Anagram Systems — Purchase/Nominal Ledger	d	£75.00
Anagram Systems — Cashboork	d	£75.00
Gemini — Cashbook (with nominal analysis)	d	£64.95
Gemini — Cashbook (with nominal analysis)	c	£59.95
Gemini — Final Accounts	d	£64.95
Gemini — Final Accounts	c	£59.95
Gemini — Cashbook/VAT/Final Accounts	c	£89.95
Gemini — Cashbook/VAT/Final Accounts	d	£99.95
Ramtop — Accounts Package	d	£75.00
Studio — Payroll 64	d	£49.95
Dell — Invoice Generator II	d	£24.95

Stock Control systems

Practicorp — Inventory 64	d	£29.95
Gemini — Stock Control	d	£24.95
Gemini — Stock Control	c	£19.95
Anagram — Stock Control	d	£75.00

Home applications

Gemini — Home Accounts	c	£19.95
Gemini — Home Accounts	d	£24.95
Gemini — Combined Home Pack	d	£39.95
Gemini — Combined Home Pack	c	£34.95
Fieldmaster — Home accounts	c	£19.95
Adamsoft — Checkbook Manager	d	£14.95

Database Filing Systems

Handic — diary 64	r	£19.95
Fieldmaster — Mail label	d	£29.59
BI — The Consultant	d	£125.00
Practicop — Practifile 64	d	£44.50
Precision — Superbase 64	d	£79.95
Precision — Superbase Starter	d	£39.95
Gemini — Database	d	£24.95
Gemini — Database	d	£19.95
Gemini — Mailist	d	£24.95
Gemini — Mailist	c	£19.95
Fieldmaster — Record Card	d or c	£19.95
Dell — Superfile	d	£14.95

Spreadsheets

Handic — Easy Calcresult	r	£39.95
Handic — Advanced Calcresult	r + d	£79.95
Practicorp — Practicalc 64	d	£44.50
Practicorp — Practicalc II	d	£69.95
Supersoft — Busicalc 1	d or c	£17.95
Supersoft — Busicalc 3	d	£49.95
Fieldmaster — Worksheet	d, f or c	£19.95

Word Processors

Simple — Simply Write	c	£40.25
Hesware — Heswriter	r	£42.95
Fieldmaster — Pagewriter	d or c	£29.95
Bank Street Writer	d	£69.00
Precision — Superscript	d	£69.95
Supersoft — Word Perfect	d	£19.95
Superoft — Word Perfect	c	£17.95

Utilities

Adamsoft — Ultrabasic	d	£19.95
Adamsoft — Chartpak 64	d	£24.95
Adamsoft — Superdisk	d	£12.50
Adamsoft — Graphics Designer	d	£19.95
Audiogenic — Forth 64	r	£29.95
Blitz compiler	f	£50.00
Access — Mach's Fastload	c + d	£39.95
Broderbund Music Shop	d	£49.95
CSM — Disk Aligment Program	d	£59.95
Baudville — Blazing Paddles	d	£49.95
Koalapad and printer	c + d	£125.00
Fieldmaster — Poster printer	c	£19.95
Commodore — Simons Basic	r	£47.50
Kuma — BC Basic	r	£57.50
Practicorp — 64 Doctor	d	£19.95
Supersoft — Master 64	d	£71.30
Supersoft — Victree	r	£56.35
Supersoft — Mikro Assembler	r	£59.80
Supersoft — Zoom Monitor	d	£14.95
Supersoft — Toolkit 64	c	£9.95
Supersoft — Toolkit 64	d	£11.95
Activision — The Designer's Pencil	c	£11.99
Jetpack compiler	d	£39.95
Hexware — forth 64	c	£54.95
Jetpack Compiler	c	£14.95
FP — Pascal 64	d	£34.95
Oasis — Basic Lightning	c	£14.95
Oasis — Basic Lightning	d	£19.95
Oasis — Machine Lightning	c	£29.95
Oasis — machine Lightning	d	£39.95
Talent — Panorama	c	£17.95
Talent — Panorama	d	£19.95
Skyles — 1541 Flash kit	r	£89.95
Epyx — Fast load	r	£49.95
Orpheus Pascal	c	£24.95
Broderbund — The Printshop	d	£44.95
Broderbund — Printshop graphics designer	d	£29.95

Simulations
Flight Simulators

Microprose — Solo Flight	c or d	£14.95
Sublogic — Flight Simulator II	d	£49.95
Sublogic — Flight Simulator II	c	£42.95
Supersoft — Interdictor Pilot	d	£19.95
Supersoft — Interdictor Pilot	c	£17.95
Activision — Space Shuttle	c	£11.99
EA — Sky Fox	d	£12.95

ALL IN STOCK NOW — Callers welcome
(10am-6pm including Saturdays)

Mail Order: Cheque or PO — add £2 for items over £20, others free. Credit cards (Access/Visa): phone or write. Immediate despatch.

The 64 Software Centre
1 Princeton Street, London WC1

Please supply the following items:

1............................ Qty.... @ £............................
2............................ Qty.... @ £............................
3............................ Qty.... @ £............................
4............................ Qty.... @ £............................
TOTAL £............................
POSTAGE £............................
TOTAL £............................
Name..
Vis/Access Card No. ....
Address ....
....
Date .... Signature ....

Readers provide the answers to printer output and basic input command problems.

Input and Output Solutions

Foul-ups or messy error messages

This tip was provided by J W Perks of Dorset.

This subroutine obviates the problems associated with the INPUT command in BASIC programs, such as accidental (or even mischievously intentional) key presses resulting in screen "foul-ups" or messy error messages.

The main program passes the following values to the sub-routine:

1. PR$, which contains the cursor-down, print colour, and reverse on/off commands;
2. P, which contains the number to move TAB;
3. L, which contains the maximum length of input allowed;
4. B, which contains the value of the first ASCII code acceptable for input;
5. E, which contains the value of the last ASCII code acceptable for input.

The sub-routine allows "rub-outs" of any or all of the inputs by making use of the DELETE key, and the pressing of return signifies completion of input.

On return from the sub-routine, the main program can use the input information in one of the two following ways:

1. if the input was a string, then N$ from the sub-routine becomes the string in the main program;
2. if the input was of numeric value, then the variable assigned to it is VAL(N$)-eg N=VAL(N$).

A breakdown of the sub-routine is as follows:

a. lines 7000-7005 clear the sub-routine string (N$), set the variable (F) for the number of characters input, set the variable (B) to the position of the first character input, and disable the RUN/STOP and RESTORE keys;

b. lines 7008-7015 provide the input prompt;

c. lines 7030-7032 deal with a null input – if the maximum number of characters allowed has been input, then line 7031 prevents a further input prompt;

d. line 7035 allows only a rub-out if the maximum number of characters has been input;

e. line 7040 signifies completion of the input if the RETURN key is pressed, and enables the RUN/STOP and RESTORE keys;

f. line 7050 allows two possibilities of input below the ASCII value of the lower limit set by variable B – these are the DELETE key and the RETURN key (lines 7100ff);

g. line 7055 prevents any input of a key whose ASCII is greater than that set by the variable E;

h. line 7070 adds the character input (A$) to the string already accepted (N$);

i. line 7080 increments the number of inputs accepted, and if this number is short of the maximum allowed (L), then the TAB position is also incremented, and a further prompt is given;

j. lines 7085-7090 prevent a further prompt if the number if inputs accepted is the maximum allowed;

k. lines 7100-7210 contain the "rub-out" function, but prevent it from being used at the beginning of the sub-routine (7110) and after all inputs have been deleted;

l. line 7200 gives a screen "rub-out" format, decrements the number of accepted characters, re-defines the string (N$) and decrements the TAB position for the next input;

m. lines 7220- allow RETURN as the only other input, and enable the RUN/STOP and RESTORE keys.

The sub-routine begins at line 7000 and the earlier lines provide two examples of its use: firstly, as a string input and, secondly, as a numeric input.

To use the first example, simply type RUN, and to use the second, RUN50 should be typed.

The command symbols inside the quotes are those used by the Commodore Daisy-wheel Printer, and a copy of these is also enclosed.

```
INPUT SUBROUTINE DEMO

10 PRINT"sQQ~R"TAB(5)"GIVE FILE NAME(MAX-8)"
20 PR$="SQQ~R":P=29:B=65:E=90:L=8:GOSUB7000
30 PRINT"SQQQQQQ"TAB(15)N$
40 END
50 PRINT"sQQQ~R"TAB(1)"INPUT ANY NUMBER BETWEEN 0 AND 999"
60 PR$="SQQQ~R":P=36:B=48:E=57:L=3:GOSUB7000
70 N=VAL(N$)
80 PRINT"SQQQQQQEr"TAB(15);N,2*N
90 END
7000 N$="":F=0:POKE808,225
7005 D=P
7008 PRINTPR$TAB(P)" "
7010 PRINT PR$TAB(P)"<"
7015 PRINTPR$TAB(P)
7020 GETA$
7030 IFLEN(A$)<>0THEN7035
7031 IFF=LTHEN7020
7032 GOTO7008
7035 IFF=LTHEN7100
7040 IFASC(A$)=13THENPRINTPR$TAB(P)"r ":POKE808,237:RETURN
7050 IFASC(A$)<BTHEN7100
7055 IFASC(A$)>ETHEN7020
7060 PRINTA$;
7070 N$=N$+A$
7080 F=F+1:IFF<LTHENP=P+1:GOTO7008
7085 P=P+1
7090 GOTO7020
7100 IFASC(A$)<>20THEN7220
7110 IFF=0THEN7020
7112 IFP=DTHEN7020
7200 PRINT"}r< }";:F=F-1:N$=LEFT$(N$,F):P=P-1
7210 GOTO7020
7220 IFASC(A$)<>13THEN7020
7225 POKE808,237:RETURN

READY.
```

```
 100 REM CONTROL CHARACTERS
 110 PRINT"S HOME"
 120 PRINT"s CLR"
 130 PRINT"Q CRSR DOWN"
 140 PRINT"q CRSR UP"
 150 PRINT"] CRSR RIGHT"
 160 PRINT"} CRSR LEFT"
 170 PRINT"R RVS ON"
 180 PRINT"r RVS OFF"
 190 PRINT"e F1"
 200 PRINT"f F3"
 210 PRINT"g F5"
 220 PRINT"h F7"
 230 PRINT"i F2"
 240 PRINT"j F4"
 250 PRINT"k F6"
 260 PRINT"l F8"
 270 PRINT"p BLACK"
 280 PRINT"E WHITE"
 300 PRINT"£ RED"
 310 PRINT"¬ CYAN"
 320 PRINT"] PURPLE"
 330 PRINT"* GREEN"
 340 PRINT"_ BLUE"
 350 PRINT"~ YELLOW"
 360 PRINT"a ORANGE"
 370 PRINT"u BROWN"
 380 PRINT"v LT RED"
 390 PRINT"w DK GREY"
 400 PRINT"x MED GREY"
 410 PRINT"y LT GREEN"
 420 PRINT"z LT BLUE"
 430 PRINT"{ LT GREY"

 READY.
```

MON 64
Quick, efficient, small data-base. Ideal for addresses, telephone numbers, agenda.
DIARY
Both for the novice and the advanced player
BRIDGE 64
V24 (RS232) Interface
VIC REL
STAT 64
Bridge 64
TELE-DATA 64
MON 64
SUPER BOX 64
Graf 64
HANDIC V24(RS232) INTERFACE
FORTH 64
SUPER BOX 64
handic

The Handic SUPERMARKET

YOU can now buy the complete range of "off the shelf" Handic products by post, if you're not near a Handic dealer. All you have to do is make your selection, tick the boxes and send in the coupon with your remittance. We will pay the postage and packing and offer a full 14 day money back guarantee. Handic produce many software and hardware accessories for IBM and compatibles, the Commodore 3000, 4000, 8000 & 700, and of course the Commodore 64.

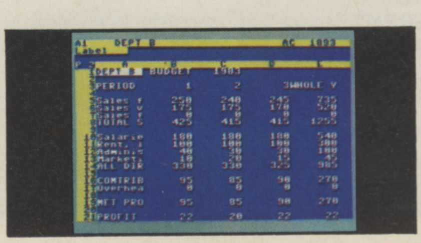
HANDIC DATABASE
Database, for example, is a brand new, cartridge and disc based software package. Especially designed for both, first time and experienced data base users.

For those of you who need to collate and store information for easy recall, data base can make life easier. The basic package includes a mailing list and 4 different print programs.

NEW
handic data base
handic data base

CALC RESULT
Calc Result, the financial spreadsheet for the 64, that's ideal for all those domestic headaches, such as loans, mortgages, home budgeting, stock portfolios, tax planning – let alone all those bills! In the office too Calc Result will make calculating, budgeting, simulation, construction so much easier for the business – large or small. This easy to learn package comes in two versions – Calc Result easy (cartridge based) and Advanced (disc and catridge based with pedagogical manual).

Calc Result
THE SPREAD SHEET
Calc Result
handic

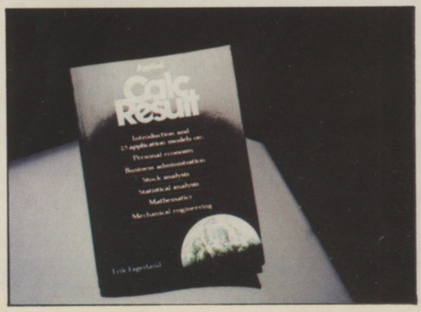


```
A1    DEPT B                    AC  1893
Label
   A         B        C        D        E
DEPT B  BUDGET     1983
PERIOD        1        2       3WHOLE Y
Sales f     250      240      245      735
Sales v     175      175      170      520
Sales f       0        0        0        0
TOTAL S     425      415      415     1255
Salarie     180      180      180      540
Rent, l     100      100      100      300
Adminis      40       30       30      100
Market.      10       20       15       45
ALL DIR     330      330      325      985
CONTRIB      95       85       90      270
Overhea       0        0        0        0
NET PRO      95       85       90      270
PROFIT       22       20       22       22
```

TECHNICAL DATA
- **Spread sheet size** 64 X 254 X 32 pages
- **Consolidation:** Easy with the 32 pages available in Calc Result Advanced
- **Printing:** Flexible printing formats out to most popular printers
- **Graph:** Histogram with scroll through feature rows and columns for printing
- **Colour:** Supports full colour down to individual cell level
- **Help:** Easy help screens available, at all levels
- Calc Result is also available in eight European languages

Applied Calc Result describes a larger number of applications in the area of:–
PERSONAL AND BUSINESS FINANCE · STOCKS AND SHARES · STATISTICS · MATHEMATICS ·

The user of Calc Result will find among the applications given many useful examples of how to get the most from Calc Result.


Applied
Calc Result
Introduction and 25 application models on:
Personal economy
Business administration
Stock analysis
Statistical analysis
Mathematics
Mechanical engineering

THE Handic supermarket basket is full of 'goodies' for your Commodore 64. Here is a brief description of what they all are! Don't forget – if you need any more information, either clip the coupon (and tick column 'A') or give us a ring.

1 Mon 64
An outstanding Machine Code Monitor (cartridge based)

2 Teledata
Communication cartridge for use with the CBM 64, link up with Databases like the bank or supermarket, over the telephone lines.

3 Superbox 64
An expansion unit for the Commodore, which features three independant cartridge slots; IEEE interface that is totally transparent; has multi-user capabilities with IEEE; and a re-set switch which activates a cold start on the computer. This unit will connect up to 3 cartridges at the same time, which makes frequent altering between programs simple and reduces wear on the cartridge slot.

4 Vic Rel
Vic Rel (Rel 64) is a relay cartridge for the CBM 64 and Vic 20 which has almost limitless applications, such as control of burglar alarms, garage doors, door locks, electric radiators, lamps , transmitters, model railways, etc.etc.

5 Disc-based games
Handic have a set of disc based games for the Commodore 64, all are great fun and superb colour graphics. At around 9.95 each. Why not treat yourself to a few? *Quantity discounts are available on request – dealer enquiries are also welcome.*

6 Diary 64
An ideal program for keeping track of telphone numbers, addresses, appointments, schedules, in fact the ideal time manager for all you sieve-heads.

7 Stat 64
The statistical CBM cartridge which ads 19 new commands to your Basic language. An excellent programming aid for all you statisticians.

8 Graf 64
A CBM cartridge that turns solutions of equations into graphical analysis, what you might call a plotter-jotter.

9 Handic Auto Modem
This modem is the expanded version of the Videotex modem (see illustration). When used together with the Handic Teledata Base 64 this unit enables you to set up your own data base with information.

Videotex Split-Speed Modem
This Split-Speed modem is especially designed to connect with computers over the telephone lines, its facilities include auto-dialling, line control, etc. (BT approval applied for).

10 RS232
A standard V.24 (RS232) interface for connecting the CBM 64 to printers and other peripherals.

11 Bridge 64
A cartridge bridge game for the intelligentsia.

12 Forth 64
A Forth generation programming language for people who know what they are talking about, and want to know even more.

MON 64
DIARY
BRIDGE
5
6
4
7
10
11
1
2
3
8
9
12

Checklist

		A	B
COMMODORE 64–SOFTWARE			
CALC RESULT ADVANCED	99.00	☐	☐
CALC RESULT EASY	49.95	☐	☐
DIARY 64	19.95	☐	☐
BRIDGE 64	19.95	☐	☐
STAT 64	29.95	☐	☐
REL 64	34.95	☐	☐
MON 64	39.95	☐	☐
GRAF 64	29.95	☐	☐
FORTH 64	34.95	☐	☐
SSP (DISK BASED DIARY)	12.95	☐	☐
DISK BASED GAMES			
SPACE ACTION	9.95	☐	☐
SPACE TRAP	9.95	☐	☐
OISAC	9.95	☐	☐
Q-HOP	9.95	☐	☐
THE SHIP	9.95	☐	☐
MUTANT SPIDERS	9.95	☐	☐
FOURTH SARCOPHAGUS	9.95	☐	☐
STELLAR CONFLICT	12.95	☐	☐
IMAGINATION	12.95	☐	☐
REAL ESTATE	12.95	☐	☐
COMMODORE 64–HARDWARE			
VIC SWITCH	97.75	☐	☐
3M CABLE	4.95	☐	☐
6M CABLE	7.94	☐	☐
12M CABLE	9.89	☐	☐
SUPER BOX	67.87	☐	☐
RS232 INTERFACE	39.42	☐	☐
RESET SWITCH	5.98	☐	☐
APPLIED CALC RESULT	14.95	☐	☐
NEW HANDIC DATA BASE	**62.00**	☐	☐
IBM & COMPATIBLES			
CALC RESULT	316.25	☐	☐
WORD RESULT	316.25	☐	☐
CALC & WORD RESULT	534.75	☐	☐

A 5% DISCOUNT MAY BE MADE
ON ORDERS OVER £99.00
POSTAGE AND PACKING F.O.C.

		A	B
SOFTWARE & HARDWARE FOR THE COMMODORE 8000/700			
CALC RESULT 8000	228.85	☐	☐
CALC RESULT 700 SERIES	258.75	☐	☐
WORD RESULT 700 SERIES	258.75	☐	☐
HARDWARE			
PET SWTICH MOTHER UNIT	172.50	☐	☐
DAUGHTER UNITS			
–SK/05/8295 1.5 mtr	112.70	☐	☐
–SK/05/8296 3.0 mtr	112.70	☐	☐
–SK/05/8296 7.5 mtr	112.70	☐	☐
–700 SERIES incl. ADAPTOR	126.74	☐	☐

I enclose cheque/Postal Order for £ ________

Charge my ☐ Access ☐ Visa ☐ American Express

Card No. ________

Signature ________

Date ________

NAME ________

ADDRESS ________

ALL PRICES INCLUDE VAT

CALL US ON 0494-450661
TO PLACE YOUR ORDER TODAY
HANDIC SOFTWARE LIMITED
Unit 1, The Valley Centre,
High Wycombe, Bucks, HP13 6EQ

Tick column A for more information and column B for order.

handic
software ltd.

Printer Interface problems

This tip was provided by Laurie Farrell of Newcastle on Tyne.

I noted in a recent issue of CCI a letter from a reader about troubles with his printer interface.

I have a similar rig [C64, 1541, mono TV, SR EX44 + SR IF40 i/f] but use only the EX44 as printer – nylon fabric ribbon (reusable) for roughs and listings and plastic one-use for 'letter quality'. I also have a VDM6410 Modem.

I have had some problems with outputs and my experience may be helpful. Most of my usage is for wordprocessing with Easy Script (ES) – letter, reports, schedules, bills of quantity, account/invoices, etc. This is catered for by a 'straight' CBM centronics cable @ £19.95 and a good buy) as Easy Script has the right software to interface: I have had NO problems in two years. NB. ES outputs 'sequential programs' but will also load and print sequential programs from other sources – more below.

In order to list basic programs, etc. without a CBM compatible printer, I obtained a Vicsprint 2064 (RAM Electronics) at discount – original price £59.95 which is too high! This works OK for most of the other stuff – it pretends to be a CBM printer and will run Easy Script also as 'CBM' instead of 'other – Centronics' on the ES menu.

The Vicsprint will NOT work well with Superbase – I use ES link – NOR will it operate AT ALL with the CBM VDM6410 modem. I have written to the distributors – RAM I am told is defunct now, and the 2064 may be difficult to get – also to Compunet but have not had their answers as yet.

Text Frames saved/stored from Compunet/Prestel as sequential programs can be loaded back from disk to screen offline OK, but will not print out without CBM printer, BUT . . . load ES then the Viewdata file name and obtain again the screen display which CAN be printed on the EX44 OK. There may be some extra control characters floating about but ES will edit these out before printing out.

I also have a short program for listings to run on the straight cable avoiding a changeover to the Vicsprint. This is loaded and operates on calling SYS49152, giving display and print outputs (Centronics); it deactivates on SYS49154. *Origin unknown* – listing below ([R = [return]).

```
20 REM  CENTRONICS PRINT WITHIN PROG.[R
30 REM [R
40 GOSUB 5000:REM INSTALL DRIVER [R
50 PRINT "THIS MESSAGE GOES" [R
55 PRINT"TO THE DISPLAY ONLY" [R
60 SYS A: PRINT [R
70 PRINT"THIS MESSAGE GOES" [R
75 PRINT"TO BOTH PRINTER" [R
80 PRINT"AND TO DISPLAY" [R
90 PRINT"SYS";A;" ACTIVATES" [R
100 PRINT"SYS";A+2;"DEACTIVATES" [R
110 SYS A+2 :R
120 PRINT"MESSAGE TO DISPLAY ONLY" [R
130 END [R

5000 REM---[R
5010 REM PRINTER DRIVER LOCATED [R
5020 REM IN $C000 ADDRESS SPACE [R
5030 A=49152:READ N [R
5040 FOR M=0 TO N-1: READ H$ [R
5050 HH=ASC(LEFT$(H$,1))-48 [R
5060 IF HH>9 THEN HH=HH-7 [R
5070 HL=ASC(RIGHT$(H$,1))-48 [R
5080 IF HL>9 THEN HL=HL-7 [R
5090 H=HL   HH*16 [R
5100 POKE A M,H:NEXT:RETURN [R
5120 REM-- [R
5130 DATA 72 [R
5140 DATA 18,B0,38,B0,1C,A9,FF,8D [R
5150 DATA 03,DD,AD,26,03,8D,46,C0 [R
5160 DATA AD,27,03,8D,47,C0,A9,2E [R
5170 DATA 8D,26,03,A9,C0,8D,27,03 [R
5180 DATA 60,AD,46,C0,8D,26,03,AD [R
5190 DATA 47,C0,8D,27,03,60,48,8D [R
5200 DATA 01,DD,A9,10,2C,0D,DD,F0 [R
5210 DATA FB,68,C9,0D,D0,07,48,A9 [R
5220 DATA 0A,20,2E,C0,68,4C,CA,F1 [R
```

64 Emulates PET

PET owners will be interested in this program from Mike Hart which allows PET software to be run on a 64

MINI-PET-EM is a small-scale PET emulator for the 64. It is a machine code routine which performs the following functions:

(i) Moves the screen to 32768 ($8000)
(ii) Moves the START-OF-BASIC to 1024 ($0400) and tidies all the pointers
(iii) Defines the screen colour as black, the 'ink' colour as white before giving the 'power-up' message which also announces the (reduced) number of bytes free. In addition, two further announcements are made – first the message 'PET MODE' and the CM= followed by a number. CM is a shorthand message for COLOUR MEMORY and the number that follows is a SYS call to define the whole of the colour memory in the same colour as the current 'ink' colour.

Screen POKES

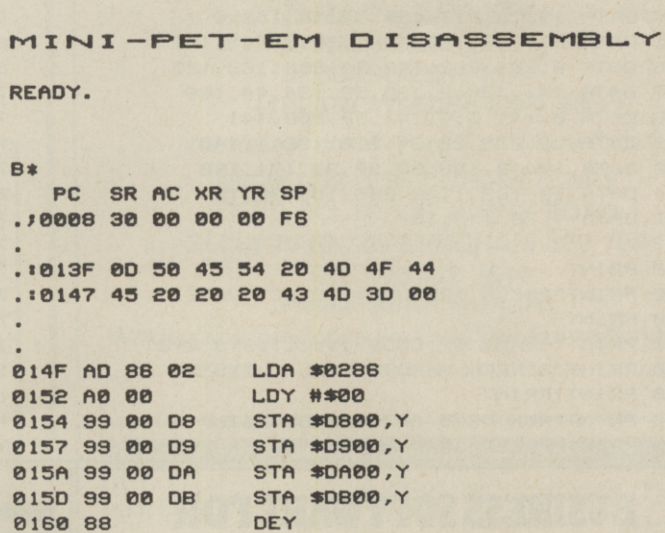
As old PET hands will know it is possible to poke directly to the screen. However all but the latest versions of the 64 require one to POKE not only the screen location with the value but also the screen memory with the appropriate colour. To overcome this difficulty on MINI-PET-EM a small machine code routine is called which writes the current 'ink colour' into colour memory and all that the user needs to do is to call it before a series of POKES to the screen are made.

Zero Page

This MINI-PET-EM does NOT provide the zero-page given in the PET machines but calls to the zero page in most PET programs were quite rare in any case. It does enable you, though, to run all the software (less sounds!) provided for the PET instantly on the 64 if it involved graphics or screen POKES.

Location in the Stack

The machine code is placed in the stack where it is completely safe – even from reset switches – unless you run a program which involves a lot of stack activity (such as many nested FOR-NEXT loops). The major part of the code relocates quite easily apart from one sub-routine call taken care of by BASIC POKES in the program provided. The message part is best left where it is in the bottom half of the stack where the absolute address of the message string is called.



```
MINI-PET-EM DISASSEMBLY

READY.


B*
   PC  SR AC XR YR SP
.;0008 30 00 00 00 F6
.
.:013F 0D 50 45 54 20 4D 4F 44
.:0147 45 20 20 20 43 4D 3D 00
.
.
014F AD 86 02     LDA $0286
0152 A0 00        LDY #$00
0154 99 00 D8     STA $D800,Y
0157 99 00 D9     STA $D900,Y
015A 99 00 DA     STA $DA00,Y
015D 99 00 DB     STA $DB00,Y
0160 88           DEY
0161 D0 F1        BNE $0154
0163 60           RTS
.
.
0164 A2 05        LDX #$05
0166 8E 00 DD     STX $DD00
0169 CA           DEX
016A 8E 18 D0     STX $D018
016D A9 80        LDA #$80
016F 8D 88 02     STA $0288
0172 85 38        STA $38
0174 86 2C        STX $2C
0176 A9 00        LDA #$00
0178 8D 00 04     STA $0400
017B 8D 20 D0     STA $D020
017E 8D 21 D0     STA $D021
0181 20 22 E4     JSR $E422
0184 A0 01        LDY #$01
0186 8C 86 02     STY $0286
0189 A9 3F        LDA #$3F
018B 20 1E AB     JSR $AB1E
018E A2 4F        LDX #$4F
0190 A9 01        LDA #$01
0192 20 CD BD     JSR $BDCD
0195 20 4F 01     JSR $014F
0198 4C 74 A4     JMP $A474
```

MINI-PET-EM

```
 1 REM ***     MINI-PET-EM     ****
 2 :
 3 REM  **      MIKE HART      ***
 4 :
 10 M=319 : REM MESSAGE STRING
 20 FOR J=0 TO 15:READ X:POKE M+J,X:NEXT
 25 :
 30 S=335 : REM START OF CODE
 40 FOR J=0 TO 75:READ X:POKE S+J,X:NEXT
 50 :
 60 REM POKE LOC'N OF COLOUR MEM. CALL
 70 HI=INT(S/256):LO=S-256*HI
 80 POKE S+66,HI:POKE S+64,LO
 90 POKE S+71,LO:POKE S+72,HI
 95 :
 100 DATA 13,80,69,84,32,77,79,68
 101 DATA 69,32,32,32,67,77,61,0
 102 :
 103 DATA 173,134,2,160,0,153,0,216
 104 DATA 153,0,217,153,0,218,153,0
 105 DATA 219,136,208,241,96,162,5,142
 106 DATA 0,221,202,142,24,208,169,128
 107 DATA 141,136,2,133,56,134,44,169
 108 DATA 0,141,0,4,141,32,208,141
 109 DATA 33,208,32,34,228,160,1,140
 110 DATA 134,2,169,63,32,30,171,162
 111 DATA 79,169,1,32,205,189,32,79
 112 DATA 1,76,116,164
 113 :
 200 PRINT
 210 PRINT"PRESS 'RETURN' TO ACTIVATE..."
 220 PRINT
 230 PRINT"START OF CODE .......SYS"S+21
 240 PRINT"SCREEN MEMORY CALL ..SYS"S
 250 PRINT:PRINT
 260 PRINT"RUN DEMO AFTERWARDS WITH"
 270 PRINT"POKE44,8:RUN 1000"
 280 PRINT:PRINT:PRINT
 290 PRINT"SYS(S+21)";CHR$(145)CHR$(145);
 300 END
 310 :
 500 REM CALL 'START-OF-CODE' ADDRESS
 510 REM (IN THIS CASE 335) WITH A SYS
 520 REM BEFORE YOU POKE THE SCREEN ..
 530 REM
 540 REM THIS WILL SET COLOUR MEMORY
 550 REM TO THE CURRENT 'PEN' COLOUR
 560 REM
 570 REM ACTIVATE THE 'MINI-PET-EM'
 580 REM WITH A SYS CALL TO
 590 REM START-OF-CODE + 21
 600 :
 610 REM YOU MAY RELOCATE THE MAIN CODE
 620 REM (WHICH DEFAULTS TO $014F-$019A
 630 REM IN THE STACK AREA) FROM THE
 640 REM STACK TO ANOTHER SAFE AREA
 650 REM (EG. $C000=49152) IF YOU WISH..
 660 REM
 670 REM MAKE A NOTE OF THE NEW COLOUR
 680 REM MEMORY CALL,THOUGH, AND USE IT
 690 REM BEFORE YOU POKE THE SCREEN ..
 700 REM
 710 REM TRY THE FOLLOWING DEMO AFTER
 720 REM YOU HAVE CALLED 'MINI-PET-EM'..
 730 REM
 740 REM TO RUN THE DEMO RE-ADJUST
 750 REM START-OF-BASIC BY POKE 44,8
 760 REM AFTER 'MINI-PET-EM' HAS BEEN
 770 REM ACTIVATED AND THEN TYPE
 780 REM 'RUN 1000' TO RUN THE DEMO.
 790 REM
 1000 PRINT CHR$(147):SYS(335)
 1010 FOR J=1 TO 500
 1020 POKE 32768+RND(1)*1000,42
 1030 NEXT J:PRINT CHR$(147)
READY.
```

BUSINESS SOFTWARE FOR COMMODORE 8000 series, 64 etc.

PURCHASE LEDGER **60.00 + VAT**
daybook, detailed due for payment report, VAT analysis list of current balances, labels, 30 "live" transactions on each account. Capacity: 200 accounts on 1541 or 4040, 600 on 8050 or 1200 on 8250.

SALES LEDGER & INVOICING **82.22 + VAT**
Prints invoices to your own design – optional columns, discounts etc. Description can occupy more than one line. Accepts most types of continuous invoice stationery. Transfers details to sales ledger, prints daybook, statements, aged analysis, VAT analysis, labels, 30 "live" transactions on each account. Capacity as for purchase ledger.

FINAL ACCOUNTS **60.00 + VAT**
Full double-entry book-keeping to trial balance, profit and loss and balance sheet. Includes special entry routines for purchases and sales and two types of journals: single debits matching single credits and groups of up to 100 of each. Monthly analysis, 20 user-definable reports, detailed audit-trail printout or screen display for single accounts or all accounts. 200 named nominal accounts on 1541 or 4040, 700 on 8050 or 8250.

INTEGRATED ACCOUNTS **190.00 + VAT**
All the above software combined into one integrated package. Also includes stock control, but this is not integrated with the rest.

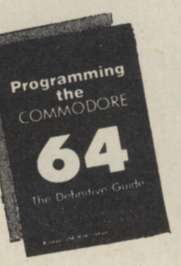
PAYROLL **80.00 + VAT**
New NI rules, password protection, hourly, weekly & monthly basic, 7 overtime or piecework rates, all tax codes, pension & superannuation deductions, SSP etc.

AND TELEX ON YOUR 64

Return within 21 days for refund if not delighted.

ELECTRONIC AIDS (TEWKESBURY) LTD.
62 High St. Evesham Worcs. WR11 4HG
Tel: 0386-49339

COMMODORE 64 OWNERS
The Ultimate Reference Book



Programming The Commodore 64
by Rae West

Comprehensive and readable teaching and reference book on the 64. Takes over where Commodore's manual leaves off. Much larger than most computer books. Programs available separately on disk or as pack of 2 tapes – saves keying time.
Topics covered include course in BASIC programming. how BASIC works, extending BASIC, machine-language course, ROM guide and memory-maps etc, thorough coverage of graphics and sound, tape and disk handling hardware.

"Best of all the books . . . required reading for all those who wish to make full use of their 64s" – Jack Cohen.

Programming The Commodore 64 (R. West) £14.90 in UK/Europe. 624 page paperback. 17 chapters & appendices. ISBN 0 9507650 2 3. Published by Level Ltd. (Computer Publications), P.O. Box 438, Hampstead, London NW3 1BH.

Programming The Commodore 64 Disk £8.90 (incs. VAT) ISBN 0 9507650 3 1.

Programming The Commodore 64 Tapes £9.90 (incs. VAT) ISBN 0 9507650 1 X.

Programming The VIC (R. West) £10.90. Large paperback. ISBN 0 950 7650 1 5. "Packed with virtually all the information you are likely to read" – J. Goldsmith.

Programming The PET/CBM (R. West) £18.90. Large paperback. ISBN 0 9507650 0 7. "Undoubtedly the most comprehensive reference I have seen" – Jim Butterfield.

MAIL ORDER FORM
From booksellers/retailers/dealers or by direct mail. Send orders and make cheques payable to Level Ltd (Computer Publications), c/o Biblios Distribution Ltd, Star Road, Partridge Green, Nr Horsham, W. Sussex RH13 8LD.

Quantity	Title	Price	Total
________	Programming The Commodore 64 (West)	£14.90*	________
________	Programming The Commodore 64 Disk	£ 8.90**	________
________	Programming The Commodore 64 Tapes	£ 9.90**	________
________	Programming The VIC (West)	£10.90*	________
________	Programming The PET/CBM (West)	£18.90*	________
		*Add £1 each postage	________
		**Add 50 each postage	________
		TOTAL PAYMENT	________

NAME/ORGANISATION: ______________________
ADDRESS: ______________________
____
______________________ CCI 12 85

NEW

VIZAWRITE
PERSONAL WORD PROCESSOR
Classic
128

VizaWrite **Classic 128** is successor to the best-selling **VizaWrite 64**, which **THE TIMES** featured again and again in no less than three articles on word-processing! VizaWrite **Classic 128** is a high-performance, **easy-to-use** word-processor especially designed to exploit the enhanced features of the Commodore 128 computer... the speed, the memory capacity, the 80-column display, the extended keyboard... to give you the full capability of a **dedicated** word-processor station, **without** the expense!

Professional word-processor users expect their document to be **formatted as they type it**, into pages... VizaWrite **Classic** does this, **instantly!** There's no need for 'output to video' before printing... your document is always displayed **exactly as it will be printed.** Tabs, indints, centering and text columns are always in view... clearly presented, easily altered!

EDITING & PROOFING...
- Massive **55K text area,** with text file linking for **unlimited** output
- **Integrated** spell-checker/proofreader with 30,000 word **disk dictionary**
- **Full function calculator,** with add, subtract, divide and multiply... directly, or using figures in your text, plus full **row-and-column** arithmetic
- **Copy, move and delete** by character, word, sentence, paragraph or page
- **'Pull-down' menus** for easy control
- Full screen and document **scrolling,** up to **240 character** page width
- **Find/replace** any character sequence
- **Merge** from most other word processor files directly into a document, and from ASCII **spreadsheet** files
- **Glossary area,** for quick insertion of frequently used phrases to your text

VIZAWRITE
Classic
128

'A creative writer's dream...'
VizaWrite review in THE TIMES

FORMATTING...
- Page-based **pre-formatting** ('What-You-See-Is-What-You-Get')... with **word wrap** and instant text formatting. Altering **your layout is easy and immediate!**
- Supports **80-columns** in both colour and monochrome, with full colour control.
- Runs in **128 FAST** mode
- Compatible with **VizaWrite 64**
- True **'Newspaper Style'** columns, with variable width control and full editing and printing features
- **Format lines** are used to set margins, tabs, indentations and column drops
- Easy-to-remember **format symbols** for tabs, indents and column processing
- **Automatic** paragraph indentation, numeric tabbing, right alignment, centering and justification

VIZAWRITE
Classic
128

'Almost perfection...' VizaWrite review in YOUR COMMODORE

PRINTING...
- **Multi-line** headers and footers with **automatic** page numbering
- Multiple and collated **print copies**
- Simple and selective **mail-merge,** print labels up to 4 across
- Mail merge can use information from **VizaStar** database files
- Supports **Commodore** printers, and most **parallel or RS232** connected printers including JUKI, STAR, BROTHER, SPINWRITER etc.
- Full **proportional space** printing with JUKI, BROTHER and other DIABLO-compatible daisy wheel printers, and HP-compatible laser printers
- Built-in **proportional space NLQ character fonts** for CBM and EPSON dot-matrix printers and compatibles

VIZAWRITE
Classic
128

'I liked VizaWrite immensely...'
review in COMMODORE USER

VizaWrite **Classic** has **every** essential professional word-processor feature... bringing document preparation and printing to new levels of perfection. Enormous **55K** text area, **pull-down menus** for ease-of-use, true **'newspaper style'** columns, **'near letter quality'** dot-matrix printer fonts, true **proportional space** printing, phrase glossary, full function **calculator** with row-and-column arithmetic, fully integrated **spelling checker...** VizaWrite **Classic**, for fast and reliable document content, excellently presented... an easy-to-use wordprocessor with **Classic** features!

VIZAWRITE 'CLASSIC' 128 (INTRODUCTORY OFFER)	~~£99.95~~	£85.00!
VIZAWRITE 64 'PROFESSIONAL' (INCLUDES VIZASPELL)	~~£99.95~~	£85.00!
VIZAWRITE 64 (DISK) ~~£79.95~~ £67.95! (CARTRIDGE)	~~£89.95~~	£78.95!
VIZASTAR 64 (DATABASE/SPREADSHEET) XL4: £74.95!	XL8:	£115.95!

Simon's Basic	~~£50.00~~	£35.00
JetPack (disk)	~~39.95~~	29.95
Master 64 (disk)	~~69.00~~	39.00
SuperType (disk)	~~25.95~~	21.95
SuperType (tape)	~~19.95~~	16.95
SuperBase Starter	~~39.95~~	29.95
SuperBase 64	~~79.95~~	69.95

SuperBase 128	~~£99.95~~	£85.00
SuperScript 64	~~69.95~~	58.95
SuperScript 128	~~79.95~~	69.95
EasyScript to SuperScript upgrade-send disk and manual cover		44.95
SuperScript to SuperScript 128		57.95
SuperBase to SuperBase 128		67.95

WANT IT TOMORROW??? CALL US TODAY!!! ON 01-546-7256

Prices include VAT and POSTAGE and are correct on going to press. Order by post or phone, using cheque, Access, Barclaycard or postal order. Despatch is by same day 1st CLASS post. Product data available on request, or phone for advice if in doubt. [REF A36]

Access
VISA

Calco Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

TOP TEN
IN
EDUCATIONAL SOFTWARE

FOR THE

COMMODORE 64 or VIC 20
ONLY £4.95 EACH

(1) PHYSICS O LEV/CSE
(2) BIOLOGY O LEV/CSE
(3) MATHS CSE
(4) COMPUTER STUDIES O LEV/CSE
(5) MATHS 12/14 YRS
(6) SCIENCE 12/14 YRS
(7) MATHS 8/11 YRS
(8) ARITHMETIC 7/10 YRS
(9) REASONING 11+
(10) KNOWLEDGE 9/99 YRS

Immediate delivery by First Class Post

MICRO-DE-BUG CONSULTANCY
DEPT. CCI, 60 SIR JOHNS ROAD
SELLY PARK, BIRMINGHAM B29 7ER
TEL. 021-472 7610
(Please state computer)

Written and produced by Qualified Educationalists.

★★ TAPE BACK-UP DEVICES ★★

DCL 1 Interface
The DCL1 links two Datasettes, so that loading any program (including Turbos) from Datasette no.1 simultaneously creates a BACK-UP TAPE on Datasette 2. No software needed.
★ Thousands sold ★ ORDER AS DCL 1 **PRICE £10.00**

DCL 4 Interface
This SUPER DCL1 is for those with one datasette and one audio recorder. Back-up tapes can be made on either a second Datasette or on an audio recorder. A LED data monitor shows the start & end of programs.
★ Very Popular ★ ORDER AS DCL 4 **PRICE £17.00**

DCL4A Interface
SIMILAR TO THE DCL4 but fitted with an Audible data monitor.
★★ NEW ★★ ORDER AS DCL4A **PRICE £18.50**

★★ BACK-UP PROBLEMS SOLVED ★★

Alignment Tape
Realign your Datasette tape head VERY PRECISELY with this easy to use kit. (No dismantling of the Datasette required) Two high baud rate tests are provided plus a special screwdriver and full instruction.
★★ NEW ★★ ORDER AS DHA 1 **PRICE £7.50**

Tape Head Demagnetiser
This mains powered demagnetiser, if used a few seconds per week, (no need to dismantle the Datasette), will reduce troublesome residual magnetism and improve loadability.
★ Indispensable ★ ORDER AS THD 1 **PRICE £6.30**

★★ OTHER TRILOGIC PRODUCTS ★★

RESET 2. This unit allows an 'unstoppable' RESET through the cartridge port. **PRICE £6.00**
RESET 3. This allows a RESET through the cartridge port but also enables any cartridge to be used at the same time. **PRICE £8.50**
MAINS SURGE ELIMINATOR WITH 4 SOCKETS. Fitted with 4 standard 13 amp sockets and three solid state transient suppressors. You can get rid of trailing mains leads and prevent troublesome mains surges with this inexpensive unit. **PRICE £13.45**
MAINS POWER CLEANER UNIT WITH TWIN SOCKETS. Fitted with two 13 amp sockets, mains switch, neon indicator, and a wideband reactive mains filter PLUS transient suppressors. This unit is ideal for reducing severe mains interferance **PRICE £21.95**
GT LOADER CARTRIDGE FOR 1541 DISK DRIVE. Enables your 1541 disk drive to load most games etc 4-5 times faster, (not Easyscript or Superbase). Features 'crashproof' on/off switch and abbreviated commands. **PRICE £20.00**
GT LOADER CARTRIDGE WITH BUILT-IN RESET SWITCH **PRICE £22.00**

★★ FREE CATALOGUE CONTAINING DETAILS OF PRINTERS, MONITORS, ETC, PLEASE SEND 17p STAMP ★★

★★ FAST MAIL ORDER SERVICE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL HARDWARE ★★
★ ALL PRICES ARE FULLY INCLUSIVE AND INCLUDE RECORDED DELIVERY, EXPORT ADD £1.00 EXTRA ★

TRILOGIC Dept CCI
29 HOLME LANE, BRADFORD, BD4 0QA
Tel: 0274 684289

OUR CASH & CARRY SALES COUNTER WILL BE OPENING SOON, REAR OF 5 HOLME LANE, BRADFORD 4, PLEASE PHONE FIRST TO CHECK PRICES AND AVAILABILITY.

Flipping disks

Flippy Disk is the name given to Computatill's new range of 5.25 inch soft sectored disks, costing £2.30 each.

They are double-sided, double-density and designed for use to allow both sides to be used. Single-sided disk drive users will require a Disk Nibbler (also made by Computatill!) to enable them to write to the flip-side of the disk.

As a launch promotion, Computatill are running two special offers until 31 December 1985. If you buy a Disk Nibbler £2 is offered off the usual price of £9.95, plus you get a free flippy disk.

A box of 10 disks, usually retailing at £23, is available at £19.95 with a free Nibbler.

Contact: Computatill, 77-79 Chadderton Way, Oldham, Lancashire. Tel: 061-652 8006.

Dogged by bad luck?

Greyhound racing enthusiasts looking for inside information before placing their bets may be interested in Greyhound Racing Analysis Software from American company, Software Exchange.

Two software packages are available allowing handicapping greyhound races using past performance information as taken from greyhound racing programs.

Greyhound Racing Analysis, at $29.95, claims to evaluate all the dogs in a race giving a rating number after five minutes of data entry. Ratings are then displayed and sorted, and can be printed out.

The Enhanced Greyhound Racing Analysis, at $49.95, claims to analyse twelve data items (selected from a racing program) for a more detailed evaluation of each dog.

A Bet Return alalysis is incorporated into both programs designed to tracks any wins or losses and also to give the percentage gain, if any, for the number of races bet on.

Versions are available on disk on cassette for the 64, 128 and VIC-20.

Contact: Software Exchange, 2681 Peterboro Road, PO Box 5382, W Bloomfield, MI 48033.

Safe Transit

Transporting printed circuit boards (PCB's) subjects the circuitry to the danger of burn out or degradation due to the generation of static electricity. Within seconds high voltages can be built up.

DN Computer Services has added three new transit cases to its Truedata range. Made from an electro-conductive board preventing the build up of static, the cases are available in three standard sizes: 13"×13"×2" (£26), 17"×17"×4" (£45), and 20"×13"×12" (£120).

Contact: DN Computer Services, Truedata House, Green Lane Heywood, Manchester OL10 2DY. Tel: 0706 67567.

Get Yourself a Switchbot!

Switchbots are absolutely nothing to do with your Commodore computer. Neither are they real robots! So why are we writing about them I hear someone ask. Well, Christmas is already creeping nearer and CGL's range of Switchbots make the ideal stocking-filler.

There are three Switchbots each costing £1.99, measuring 3.5" high with moveable arms and legs. Myzar, a red and blue robot bends at the chest to reveal an eraser. Byros, in blue and white, turns into a two-colour ball point pen when his feet are pulled down. And hidden in the red and white Sharbo's chest cavity is a pencil sharpener. Switchbots are suitable for children from the age of five upwards.

Also on the subject of computer-related products are two new Game & Watch pocket games from CGL. Pinball is a portable version of the famous arcade pinball game with two game options.

Blackjack follows the basic rules of the popular card game, also with two game options.

Both games incorporate a digital clock and alarm and retail at £23.

Contact: CGL, CGL House, Goldings Hill, Loughton, Essex IG10 2RR. Tel: 01-508 5600.

Maybe it's fun to you– but it's £6 an hour to your wife!

The Computer that's been giving you such a fine time with computer games is now ready to earn you some real money. Helping you to run your own business or giving your wife the chance to earn £6 or more an hour for word processing/secretarial work.

All because of the brilliant new word processing package, SuperScript from MicroPro – the makers of WordStar – the world's best selling word processing packages for microcomputers.

SuperScript **writes letters, invoices, reports, tables, documents, it stores, edits and even checks spelling.**

Versatile SuperScript SuperScript combines word processor, spelling checker, calculator and mail-merge facility, all in one package. So SuperScript gives you all the tools you need to produce high quality reports, tables, lists, personalised letters and prints labels quickly and efficiently.

Simple for the beginner If you are a newcomer to word processing, SuperScript puts you immediately at ease.
Each command is a single word, and for each command you simply move the cursor. You don't even have to type the command.

Good with numbers SuperScript allows you to extend your editing line up to 250 columns for wide documents like financial statements, and with decimal tabs it's easy to enter properly justified tables of numbers.
SuperScript's complete set of calculator functions can be used interactively or you can operate on numbers from the text of your document. Apart from the usual mathematical functions like add, subtract, multiply, divide, and percentages, you have the ability to add rows, columns or even whole tables.

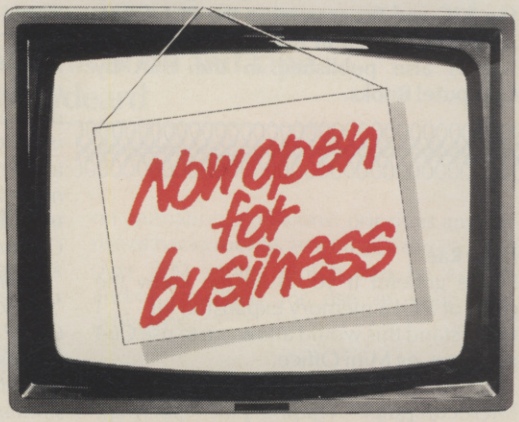
Good with spelling, too The built-in spelling checker goes right through your text, checking for errors. You have the option to correct any error, ignore it, or add the word to its 30,000 word dictionary.

Editing options SuperScript gives you all the editing options of a business-style word processor, with full block manipulation for cut-and-paste; overtype or text insertion modes; search and replace with pattern matching and optional case discrimination; backward search, case shifts for single words or larger blocks of text. And much more.

Powerful for the experienced user SuperScript also gives you the ability to cut work down to a minimum by storing your own command sequences or text on single keys. This means that with a single keystroke you can reproduce commonly used phrases or multi-line addresses from a glossary, load in document formats or execute a pre-programmed sequence of operations.

Mailings with SuperScript Personalised mailings are easy with SuperScript. You can enter the data manually or use data extracted from your spreadsheet or database. Merging can be selective. A mailing labels template is included to help you complete your mailing and you can alter the template to suit your own label format.

Attention Easy Script users! If you're already an Easy Script user, then SuperScript is the obvious next step. With its enhanced features and more powerful facilities, you'll be able to do so much more. There are no compatibility problems either. You can run your Easy Script data or Easy Spell dictionary disks under SuperScript. And by returning your Easy Script disk can obtain an upgrade for just £49.95.



AVAILABLE FOR
COMMODORE 64, 128
ATARI 800XL, 130XE · APPLE IIc, IIe
SuperScript Word Processing Software is available direct complete with Comprehensive User Manual. Only £79.95 including VAT and Postage.
OR FROM ALL GOOD DEALERS.

NEW WORD PROCESSING PACKAGE *SuperScript*

MicroPro
SuperScript
MicroPro
DISK SOFTWARE
SuperScript
FROM THE MAKERS OF WORDSTAR
SOPHISTICATED AND POWERFUL WORD PROCESSING
MicroPro

MicroPro MicroPro International Ltd
Haygarth House, 28-31 High Street, Wimbledon Village,
London SW19 5BY

ORDER BY PHONE
ASK YOUR LOCAL DEALER FOR THE SUPERSCRIPT PACKAGE, OR ORDER DIRECT BY PHONING
0483 503121
QUOTING YOUR CREDIT CARD NUMBER OR BY COMPLETING AND RETURNING THE ORDER FORM WITH YOUR CREDIT CARD DETAILS OR REMITTANCE

SuperScript ORDER FORM
To Dept CC1, CUMANA Ltd, Pines Trading Estate, Broad Street, Guildford, Surrey GU3 3BH

Please supply the following:

QTY ☐ SuperScript £79.95 (includes P&P) for* ________ computer

QTY ☐ †Upgrade for Easy Script £49.95 (includes P&P) for* ________ computer
†(Your existing Easy Script disk should be returned with this order.) *Commodore 64, 128. Atari 800XL, 130XE. Apple IIc, IIe

I enclose remittance for £________ (Cheques made payable to CUMANA Ltd). Or charge my credit card

Access/Visa No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Signature ________

Name ________
(BLOCK CAPS)
Address ________
________ Postcode ________

If you are intending to use SuperScript for a specific purpose, we should be interested to have details. Thank You ________

Letters

This month your letters are answered by Rae West. Rae is the author of three large reference books on Commodore computers; the latest is Programming the Commodore 64, following Programming the VIC and Programming the PET/CBM. All are published in the UK by Level Ltd. Rae is also published in the USA by Compute! Books.

Dear Rae

I'd be grateful if you'd let me know the price of a C16 memory expansion kit . . . I understand this would allow me to use C64 cassettes, eg Mini Office.

W F Pringle, Carlisle

Microcomputer Trading, of Norwich, make a C16 RAM expansion: phone 0603-633005.

CAUTION: an expanded C16 is identical, apart from a few output differences, to the Plus/4. BUT NEITHER machine is compatible with the C64. The fact that 'C16' sounds like 'C64' is misleading! You have been misinformed about C64 software. Even the tape formats differ – your C16, expanded or not, can't LOAD C64 tapes. Even if it could, only the simplest BASIC programs are likely to run on both computers.

Dear Rae

I have two problems with my Plus/4. Can I speed up loading or saving data to tape? Second, the wordprocessor in ROM is not designed for 1520 printer plotter. Is there any way around this?

N Stephens, Herts

I'm uncertain whether you mean loading or saving programs, or reading and writing data. In either case, it's possible to load routines into memory to handle tape in their own special formats, ignoring the normal ROM routines. Try Supersoft, Harrow, who have a lot of software experience.

Second: possibly, but I haven't seen it done. The 1520 is device 6, while the program assumes device 4. Text is printed, by the 1520, with the same commands as a printer. So you might be able to move the program from ROM into RAM, and change the relevant 6s to 4s. But the memory available for work would be reduced, and memory-handling would be different.

Dear Rae

Last Christmas I bought in London the Plus/4. Although it is far better than the 64, I feel I made a bad choice due to the lack of software.

I'm using the Plus/4 in my small business in Greece and write the programs myself.

1. Is there any business software for the Plus/4 which I can buy?
2. Does a 'Plus/4 Programmers Reference Manual' exist?
3. Can you supply me with a list of addresses corresponding to the 64's?
4. Is there a device or chip that makes Plus/4 compatible with 64?'

N Alogoskoufis, Piraeus.

I don't think the Plus/4 is "far better" than the 64; the two machines aren't so very different in capability. Commodore made more C16's than Plus/4's, so the C16 tends to be more supported than the Plus/4. This may change though Commodore intend to unload a few warehousefulls of Plus/4s by Christmas.

Commodore's mailorder department, 'Softpost', on 0536-205252, has a special C16/Plus 4 section, which could be of interest to anyone with similar problems. Remember the C16 and Plus/4 are very similar, so software compatibility upwards shouldn't be a problem, so Plus/4 owners might be able to find useful C16 programs. (Of course the C16 has too little memory to run long Plus/4 software).

Plus/4 Softpost has one item of business software, 'Financial Advisor', a compound interest calculator. It has no Plus/4 Reference Guide. So far as I know, ROM entry points haven't been published; partly because BASIC 3.5 is so long. But the Kernal routines at the top of memory are similar to the 64's and VIC-20's, which should help machine-language programmers.

No, no, a thousand times no! No device could make the Plus/4 behave like a 64.

Dear Rae

I write articles and scripts for plays, etc, and am considering using my 64 as a wordprocessor.

Would I be able to get good quality printout that didn't take forever to produce! Would I be able to go on using A4 typing paper, and is there sufficient power in my computer? "Superscript 64" reviewed in October CCI sounds just the job, but could you advise. Finally, is it possible to get an A4 size VDU? Help, please!'

E Chapman, Lincoln

I know someone who writes shortish (1/2 hour) scripts on a 64 with Superscript, so it's certainly possible. Note though that Superscript is a large program, so the 64's memory can't hold a long document, and longish text has to be stored as a series of linked files. This could mean a lot of disk access. I'd suggest you try Superscript and Vizawrite, and decide which you prefer.

The point about time is that it depends almost entirely on the printer. These are generally much slower to print than the computer is to supply text. Good quality is in the eye of the beholder: a cheap dot matrix printer isn't too bad, provided it has true descenders on g, j, p, q, and y; you may find condensed mode or enhanced mode printing better; near-letter-quality (NLQ) dot matrix is good; some software and printers can handle proportional spacing. Daisywheel printers (Commodore's is a rebadged Juki) are now very cheap, and give typewriter quality output, though the speed is slower.

A4 fanfold stationery with tear-off sprocket holes is readily available, though it's cheaper to buy stationery which is not quite A4.

A4 VDUs are expensive; they're used with wordprocessors made by firms like Xerox. The 64 is limited to its 40 column by 25 row display unless extra hardware is added.

Dear Rae

I have just purchased my second 1541 disk drive only to find that it cannot work together with my other 1541.

I'm told there is a way around, to set one drive to device 8 and the other to device 9, using hardware from Germany, so I don't have to load special hardware all the time. Can you help me please?

P Abbott, Finland

You don't need anything from Germany. Each 1541 has a pair of 'jumpers', electrical connections, inside. Cutting the connection on jumper 1 converts to drive number to 9. Cutting jumper 2 converts the drive number to 10 or 11, depending on jumper 1. So four 1541s could be used at once. All this involves taking the casing off – don't do this with the power on! – My book 'Programming the Commodore 64' has a diagram (p. 515).

Altered disks need commands like LOAD "$0",9 in place of LOAD "$0",8. This can cause hitches – e.g. the C128 and Plus/4 DLOAD commands assume device number 8, so DLOAD "PROGRAM" gives ?DEVICE NOT PRESENT ERROR. You'd need DLOAD "PROGRAM",U9.

The new 1571 drives (but not the 1570) have two external switches to allow the device number to be changed.

Dear Rae

I'm desperately looking for a biorhythm program for the 64. Can any of your readers help?

M Osment, Harlow.

Perhaps a reader could help. I thought biorhythms had been discredited . . .

Do you have a computing problem, or advice to offer other readers? Write to us at:

Queries,
Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane,
London EC1R 0NE

Please do not send your SAE's as it is impossible to reply personally to every query.

Basic Resolutions

Gain control over high-res graphics with this book and tape package previewed by Tony Lydeard

Phil Cornes' "Screen-Shot Graphics Pack" is published by Dorling Kindersley. It consists of two books and a tape. The books are volumes 3 and 4 of his teach-yourself-programming series and the tape saves you typing in all the listings that appear in the books. (There is also a demonstration of the techniques described).

The aim of the package is to give the BASIC programmer control over high-res graphics. The way this is done is by presenting a series of 19 machine code routines which, in essence, form an extended BASIC. The new commands are accessed by simplified SYS calls from within a normal BASIC program. Variables are used to represent the various addresses so there isn't too much memorising to do – you do have to be careful not to use the same variables elsewhere in your program though!

The commands which are effectively added to the C64's BASIC by the routines are:

HI-RES – initialises the hi-res screen
LO-RES – reverts to the normal text screen
RESTORE – resets the DATA pointer
RESCUE – cancels the effect of NEW
MERGE – allows two or more programs to be added together
CLEAR-AND-COLOUR – sets the foreground and background colours
BLOCK-COLOUR – colours a specified rectangular area
PLOT – lights a specified pixel
DRAW – joins two points with a straight line
CIRCLE – draws a circle on a given centre and with a defined radius
ARC – draws a bit of a circle
ERASE – cancels lit pixels as directed
FLOOD-FILL – fills a delineated area with a specified colour
ROM-COPY – copies the Commodore character set into RAM
TEXT – allows Commodore characters and UDG's to be used on the Hi-Res screen
DEFINE-CHARACTER – enables UDG's to be designed and entered
PATTERN-FILL – fills delineated area with specified character
BLOCK-COPY – duplicates graphics displays from one part of the screen to another
SCROLL – permits horizontal scrolling of graphics displays (with or without wrap-around)

DK
Screen Shot
STEP-BY-STEP PROGRAMMING
COMMODORE 64
GRAPHICS
PACK
PHIL CORNES

Also included in the software package are a Graphics Editor, which enables graphics to be entered from the keyboard direct to the screen; a Turtle routine and a Sprite Editor. These all use the machine code routines introduced earlier but make them more accessible to the less experienced programmer. Displays can be saved to or loaded from tape or disk for use in other programs.

Book 3 introduces the routines and explains their use. The format is clear and easy to follow, with a summary of syntax at the end of each section. Book 4 is dedicated entirely to sprites, with sections on animation, collisions, priorities and the use of backgrounds as well as a directory of over 200 sprites which can be copied and/or modified for use in your own programs.

"An invaluable addition"

Since the books are marked at £5.95 each and the total package costs £15.95, it doesn't take a genius to work out that the cassette and box have been valued at £3.85 – pretty good value for the amount of time you can save. (The Graphics Editor and Sprite Editor on my copy wouldn't load but I'm sure the production copies will be better).

This bundle makes the ideal complement to the first two books in the series (which constitute about the best intoduction to Commodore BASIC that I have seen). If you've learnt your BASIC from some other source, the Graphics Pack will be an invaluable addition to your software library.

The technique of using SYS calls is not as convenient as would have been the introduction of new keywords. My only other criticism is that the documentation for the actual software is sparse. It is obvious that the books were originally intended to stand alone and that the inclusion of the tape was an idea that came later.

"Presentation vastly superior"

The package compares favourably with one or two other programs I have seen – mainly because of the accompanying literature, which not only explains how to use the utilities but also gives an insight into how they work.

The overall presentation of the package is vastly superior to what one has come to expect from computer literature. Printed in

Evesham Micros

THE UTILITY SPECIALISTS

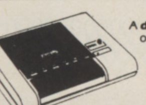
3M Floppy Disks

BOXES OF TEN DISCS

SS/DD £16.00
DS/DD £20.00

NEW SPECIAL PACKS WITH PLASTIC CASE

SS/DD .... £17.00 including Case
DS/DD .... £21.00 including Case



DATA RECORDER

A **dedicated** data recorder designed for use on the CBM 64 or Vic-20. Specification as C2N but **with pause button.** Model available for the PLUS4 or 16 at same price.

SATISFACTION GUARANTEED.

ONLY £29.95

HARDWARE SPECIALS

STAR SG10C
The ultimate Commodore ready printer. 120 cps or 40 cps in near letter quality mode. Friction and tractor feed.
ONLY £249.00

MPS801 PRINTER
Popular printer at a stunning price.
ONLY £89.95

MPS803 PRINTER
Exceptional print quality for the price.
ONLY £119.95

1541 DISC DRIVE
Look at this price. ONLY £149.95

DISC NOTCHER
Handy new tool allows you to punch a second write protect notch in your discs. Double your disc capacity by using both sides of your discs.
ONLY £9.95

FREEZE FRAME

THE NEW GENERATION OF BACKUP METHODS HAS ARRIVED

"Freeze Frame" is the product that '64 owners have been waiting for. At the flick of a switch **"Freeze Frame"** will take control of your computer and freeze the program in memory, allowing you to **SAVE it to tape or disc**. The uses are endless, but typical applications are . . .

TAPE TO DISC: ANY program can be frozen and **transferred to disc** regardless of the type of loading technique used. (Disc save incorporates a fast loading system.)

DISC TO TAPE: ANY memory resident disc program can be backed up onto tape. (Choice of normal or turbo save speed.)

DISC TO DISC: It is possible to make a self contained back up of disc based programs that will both **load at high speed** and **allow the rest of the disc to be used as normal**.

TAPE TO TAPE: Tape back ups can be made at turbo speed with just one tape deck.

In fact **"Freeze Frame" will FREEZE any program** that is memory resident, and allow you to make a back up of that program onto tape or disc. The beauty being that the saved version can be a fast booting single file. The process is **completely automatic**, no knowledge of BASIC or machine language is required, just follow the prompts and the simple instructions for **100% success**.

"Freeze Frame" is a hardware "device" that plugs into the cartridge port of the '64. It does **NOT** dump the entire contents of memory, just the **working program**. Programs converted run **independently** of the hardware.

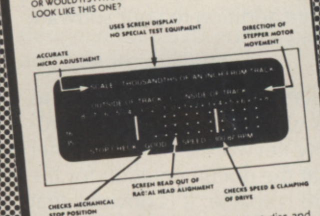
ONLY £39.95

WARNING: Don't be mislead by other adverts, if you want to transfer turbo load programs to disc, software only utilities are **inadequate**. They suffer from a variety of drawbacks including poor success rate, awkward to use, greedy on disc space and overpricing.

ALIGNMENT PROBLEMS?

1541 PHYSICAL EXAM £39.95

IS YOUR 1541 HEALTHY?
OR WOULD ITS PHYSICAL EXAM
LOOK LIKE THIS ONE?


USES SCREEN DISPLAY NO SPECIAL TEST EQUIPMENT
DIRECTION OF STEPPER MOTOR MOVEMENT
ACCURATE MICRO ADJUSTMENT
CHECKS MECHANICAL STOP POSITION
SCREEN READ OUT OF RADIAL HEAD ALIGNMENT
CHECKS SPEED & CLAMPING OF DRIVE

The program includes a digital alignment disc and software which allows you to **accurately check and correct** disc drive alignment. The instruction booklet is **very detailed**. Also includes quiet drive stops to **stop** that "hammering" thus preventing further problems.

ONLY £39.95

DISC DISECTOR V3.0

Now the ultimate disc copying and utility program for the CBM 64 with 1541 disc drive has been **improved even further**. As well as general improvements plus the addition of some useful utilities two important new programs have been added.

The Evesham Nibbler

This is the first copier of its kind to appear on the U.K. market. It is a **true nibbler** (byte for byte) copier that will copy **ALL DOS errors automatically**. This includes DOS errors 20–29 inc. plus non standard errors like half tracks, extra tracks, non standard sync. renumbered tracks, etc. They are all treated as normal work. No knowledge is required at all it just **"nibbles away"** and produces a perfect copy. Yet it **only takes eight minutes**. Has copied **all discs tested** (except itself). A **class above** anything else available.

Fast File Copier

An **incredibly handy** selective file copier that LOADs and SAVEs at **five times** normal speed. Sounds useful? You won't believe how much until you have used it.

As well as these programs "Disc Disector" incorporates a whole host of useful utilities including the following. **Fast Format**, **Selective Menu Maker**, **Disc Editor** (new sophisticated machine code version), **Scratch/Unscratch**, **Fastcopy**, **Rename**, **Fastload** (four times faster), etc. etc. This program is an **essential purchase** for the 1541 user.

ONLY £29.95

Customers with earlier versions may return them along with £9.95 for "V3.0".

Quickdisc+

FAST LOAD PLUS UTILITY CARTRIDGE

Get a **QUICKDISC+** cartridge plugged into your '64 and your 1541 will really **start to perform**. So many features per pound (sterling) that you will hardly believe it. Includes the following . . .

Fast LOAD and SAVE (four to five times normal speed). Works with most protected software. Can be switched in and out from the keyboard.
Fast Format takes just 10 seconds.
Fast Backup copies an entire disc in four minutes. (Not heavily protected software.)
Fast File Copier for selective fast copying.
Improved DOS commands (DOS 5.1) makes for easy use of the disc drive. e.g. $(RETURN) will LOAD and display a directory without overwriting BASIC. SHIFT RUN/STOP will LOAD"0:*",8,1 etc. etc. Very, very useful.
Incorporates Centronics printer software (user port) **with CBM graphics** capability. See "Commodore Connexion" for suitable lead.
A RESET switch is fitted. (We have found this to be "unstoppable", it also preserves the tape buffer.)
NO MEMORY IS USED by this cartridge, it is totally "transparent" and uses special switching techniques.
Now the price. No, not £49.95, it's **not even half** that much. Can you afford to be without QUICKDISC+.

ONLY £19.95

No extra connections are necessary with QUICKDISC+ and unlike most similar products it is compatible with printers and second drives.

All prices include P&P and VAT. Send cheque, Postal Order of Credit Card No. Credit Card order accepted by phone. Callers welcome. Wide range of goods stocked. Trade enquiries welcome. European orders send price as advertised. Outside Europe £2.00 for airmail. Mail order to Evesham Shop please.

EVESHAM MICROS
BRIDGE STREET, EVESHAM,
WORCS., WR11 4RY.
Tel: 0386 41989

MICRO CENTRE
1756 PERSHORE ROAD,
COTTERIDGE, BIRMINGHAM.
Tel: 021-458 4564

128

If you're as **Impressed** as we are with the new **Commodore 128**, you'll be even more **Impressed** with the new software that's appearing for it now! Already we've got **SuperBase 128** (~~£99.95~~ £85.00!), **SuperScript 128** (~~£79.95~~ £69.95!), and the amazing **VizaWrite Classic 128** (~~£99.95~~ £89.00!)... so watch this space!

Although we are by far the **largest UK retailer** of SuperBase, VizaStar and VizaWrite for the **Commodore 64**, for over **five years** we have supported the best software for all the **Commodore** business machines! So if you have a **CBM/PET 3000, 4000, 8000, 700** or **PC**, then don't forget us... we haven't forgotten you! Why not phone or write for our **CBM/PET catalogue?**

Superscript 64

All the features you'll ever need for **professional word processing**... and then more! Unrivalled **240-column** text handling, **variable width** screen, **word-wrap, cut-and-paste, four-way** scrolling, document linking for **unlimited capacity**, global **search-and-replace**, **help screen**, full memory **calculator**, row and column **arithmetic**, **menu** or **keyed** commands with **command strings**, **background printing**, complete **letter quality** print control, **spelling checker** with both UK and US **disk dictionaries**, comprehensive **four part** user manual...

OUR PRICE ~~£69.95~~ £58.95! ...WHILE STOCKS LAST!

1st BOOKS

The Anatomy of A Commodore 64	£8.95
The Anatomy of the 1541 Disk Drive	£8.95
Your '64 Cassette Book	£8.95
Tricks and Tips for your '64	£8.95
Machine Language Book for the '64	£8.95
'64 Advanced Machine Language	£8.95
Peeks and Pokes for the '64	£7.95
Commodore 64 Idea Book	£8.95
Graphics Book for your '64	£8.95

Super TYPE

Are you a **two-finger** typist? Then why not let **SuperType** help you learn to **touch-type** the fast and easy way... with your **computer** as the teacher! All the family can learn this useful skill, at their **own pace**... and profit from the very latest computer-aided **training** and **feedback** techniques!

ON TAPE ~~£19.95~~ £16.95!
ON DISK ~~£25.95~~ £21.95!

Superbase 64

Transform your **Commodore 64** into a full featured **professional** database system, with up to **1000** characters per record on up to **four screens**... and up to **128 items** per record, definable as **key, text, numeric, result** or **date**... in files of up to 16 million characters! **SuperBase 64** even has **calculator** and **calendar** functions, **easy input** from word processor or data files, both **menu-driven** and **program** control, **sorting** and **searching**, fully definable **report** and **screen** formats... **Superbase 64** is essential if you want the **most** from your 64! Supplied on 1541 disk with excellent tutorial and reference manual, plus **audio learning** tape...

NOW ONLY ~~£79.95~~ £69.95!

Jetpack

Your programs will really **take off** with **JetPack 64!** 100% compatible with CBM Basic, **Jetpack** compiles Basic programs into **machine code**, running up to **25 times** faster... using **up to half** as much memory! And it even accepts **Basic extensions** and **machine code** routines as well!

WHILE STOCKS LAST... ~~£39.95~~ £29.95!

1st BUMPER BUNDLES!

For a **limited** period we can offer amazing savings on top-quality books & software from First Publishing. Save **£60** on Offer No.1 **(FirstWord + First Base + PowerPlan)** for only **£56.95!** Save **£20** on Offer No.2 **(Basic 64** compiler **+ Assembler Monitor 64)** ...only **£34.95!** And save **£10** on best-sellers Offer No.3 **(Anatomy of the 64 + Tricks & Tips + Cassette Book)**... only **£16.85!** Please allow 5 days' delivery.

VIZASTAR 64

Spreadsheet, database and **graphics** too... all integrated into one amazing package, at an amazingly **affordable** price! The very latest design techniques combine the ultimate in **ease-of-use** with all the sophistication of a fully **Integrated** product... **VizaStar's** advanced features include **high speed** maths functions, large **1000** by **64** worksheet, programmability, windows, cell protection, search and sort, text editing, wordprocessor compatibility, simultaneous graphics... integrated with a **1000**-character per record **database**, up to **250** characters per field... the **only** product of its kind for the **Commodore 64!** Suits most printers, supplied with excellent handbook. (**XL8** version now available with a **40% bigger** spreadsheet plus **business graphics**, ~~£129.95~~ £115.95!)

OUR PRICE (XL4) NOW ONLY £74.95!

VIZAWRITE 64

A **high-performance, low-cost** wordprocessor, with full **on-screen** formatting, that takes full advantage of the **colour, graphics** and **memory** capacity of the **Commodore 64**... that works with both **disk** and **tape**... and supports virtually **any** printer! With a concise and easy-to-follow user manual, **VizaWrite** is the **ultimate** personal computer word processor! (Available with **VizaSpell**, **a 30,000 word** disk dictionary and spelling-checker, for ~~£99.95~~ £85.00!)

VIZAWRITE (DISK) ~~£79.95~~ £67.95! (CARTRIDGE) ~~£89.95~~ £78.95!

SuperBase Starter (SAVE £10!)	29.95
SIMON'S BASIC (SAVE £15!)	35.00
MASTER 64 (SAVE £30!)	39.00
JETPACK (TAPE)	14.95

EasyScript to SuperScript upgrade-send disk and manual cover	44.95
SuperScript to SuperScript 128	57.95
SuperBase to SuperBase 128	67.95

WANT IT TOMORROW??? CALL US TODAY!!! ON 01–546–7256

Prices Include VAT and POSTAGE and are correct on going to press. Order by post or phone, using cheque, Access, Barclaycard or postal order. Despatch is by same day 1st CLASS post. Product data available on request, or phone for advice if in doubt. [REF A35]

Calco Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256 full colour throughout, the books are copiously illustrated with photographs of actual screen displays. Even the program listings are photographed from the screen – this technique somehow gives one confidence that the listings will work properly if entered exactly as they appear onthe page. It's certainly an improvement on the more usual method of presentation whereby printouts from dot-matrix printers are used. The author has also managed to avoid the Commodore graphics symbols that pepper the average program listing – in some cases this may make the programs slightly lengthier but they are also more intelligible – not to mention printable for those of us who have chosen not to buy a Commodore printer.

CONTACT: Dorling Kindersley, 1-2 Henrietta Street, London WC2E 8PS Tel: 01-240 5151.

Machine Code Utility

Tony Lydeard evaluates a tool for those with a little knowledge of assemby language

There are a lot of people to whom the very mention of machine code is the best possible reason for ignoring the rest of the article and turning the page. The following paragraph is written especially for those people.

Machine code

Those of you who are still left probably realise that very few programmers actually write machine code as such. Assembly language isn't exactly easy but it's a sight easier than writing direct into machine code. The opcodes which comprise assembly language need to be translated into the numbers which the computer will understand. Which is where an Assembler comes in.

This new release from McGraw Hill is a tape-based Assembler which recognises the standard 6510 instruction set as well as a number of "pseudo-instructions" of its own. It also incorporates a Disassembler with a number of useful features to enable programmers to examine their own (or other people's) code. It doesn't include a Monitor – the third part of an Assembly Language programmer's toolkit – but there are a number of these in the public domain, so it's no great hardship. (On the other hand, it would have been no great hardship for Mc.Graw Hill to include one!)

The package does not pretend to be a means of learning Assembly language but is rather a tool for those who have at least a fair idea of what they are doing. It enables Assembly mnemonics to be written as normal BASIC programs with line numbers. Naturally they will not run but can be saved and reloaded. The Assembler will read such a program (known as a source file) and convert it to machine code.

"Makes program development simpler"

The assembled code can be stored anywhere in memory and there is the option to run the code at a location other than where it is stored. Real labels are permitted (up to 75 characters long), comments can be included and there is an efficient error-trapping routine, which indicates not only where the error occurs but also its type. There is also a Renumber routine which makes program development simpler than it might otherwise have been.

The Assembler can be instructed to list to screen and/or printer. The on-screen listing is colour coded for ease of interpretation. Thus, Loads and Stores are displayed in light green, Compares in cyan, Branches in yellow, Arithmetic and Boolean in orange, Shifts and Rotates in blue, Increments and Decrements in purple, Transfers in grey, other instructions in light red and Labels/ Comments in white.

McGraw Hill describe the program as a "software cartridge". Their justification for this is that it occupies the same area as the BASIC ROM and uses the kernal memory area to store label addresses, thereby leaving the vast majority of the free RAM available to the programmer.

The Disassembler is supplied on the other side of the cassette. It is possible to have both programs in memory simultaneously (provided that the Assembler is loaded first).

"Makes good use of function keys"

The programmer is given the option of entering and addresses in either decimal or hexadecimal; of specifying start and finish addresses for the disassembly; of sending listings (in dec or hex) to screen or printer and of having the disassembly listed in "screenfuls". As with the Assembler, there is a colour-coded screen display – Branches in red, breaks in yellow and other recognisable mnemonics in green. If a byte does not represent a valid mnemonic, it is displayed in blue with a row of question marks. A further feature is that JMP, BRK and RTS instructions are underlined by a series of full stops to indicate the end of a particular section of code.

The Disassembler makes good use of the function keys. F1 returns to BASIC from the menu, F3 calls up the menu (or pauses the listing in continuous mode), F5 backsteps 256 bytes (in paged mode) and F7 calls up the next screenful of disassembled listing.

The manual supplied with the tape gives a reasonable description of what the programs are capable of. It is however a little short on details of how exactly to use what is provided.*

At £16.95, McGraw Hill's Assembler/Disassembler is very reasonably priced and should be a useful investment for the serious programmer.

CONTACT: McGraw Hill Book Company (UK) Ltd, Shoppenhangers Road, Maidenhead, Berks.

Blitz your Basic

Convert your Basic into P-code with this disk-based compiler. Tony Lydeard sees how it's done.

Imagine being able to convert your BASIC programs into machine code completely automatically. Imagine the saving of memory and the increase in speed.

Keep imagining! Blitz doesn't go quite that far. What it can do is convert Commodore BASIc into what is calls P-code, which is claimed to be halfway there. The compiled programs that I tested certainly ran faster (on average, about 1.5 times the speed) but took up more space.

The reason for this increase in size is that the compiled code has to have an additional interpreter so that the machine can recognise the new instructions. The 8-page word-processed manual that Supersoft supply with the program disk claims that the code itself occupies about 60% of the space taken by the original BASIC but that the "runtime routines" need an extra 6k. By my calculation, this means that you start to make savings on memory (and storage space) on BASIC programs of about 15K. The amount of space taken up by a program isn't a problem until you get way above this figure (although the time taken to load it can be irksome).

"Operating is simplicity in itself"

Blitz is supplied on disk for the simple reason that it can only work with a disk drive (my apologies to tape users who've read this far). In fact, Blitz works even better with two disk drives – or so the manual claims. You need to be a bit careful if, like myself, you just have a single drive, as the compiler creates new files on the program disk and gets upset if there's not enough room for them.

Operating Blitz (or Superblitz as it sometimes calls itself) is simplicity itself. Load the compiler and follow the prompts. The program sucks in your BASIC code, compiles it and then puts it back on the disc in its new form. It requires two passes to make the conversion, writing intermediate files which are automatically scratched when Blitz has finished with them. The compiled program has the same name as your original BASIC program but with a C/prefix.

If you have two drives Blitz offers three additional modes. All programmes on the disk can be compiled at the same time using the Batch Compilation mode (be prepared for a pretty lengthy wait while this is going on). Programs can be linked in two different ways. Mode 3 compiles all the programs on a disk but only incorporates the runtime routines into the first one. Thus only the first program can be loaded and run but the others can be called from within it. No variable passing is permitted in this mode. Mode 4 also compiles all the programs on the source disk with the runtime routines in the first one only but it also incorporates a third pass which creates a list of variables and arrays used in each module. These can then be passed from one module to another.

"Tracing errors"

Supersoft recommended that only BASIC programs that have been thoroughly tested and debugged should be compiled. They then go on to explain how to trace errors if you haven't been sensible enough to follow their advice. In fact, they go so far as to put a special "cross reference file" on your disk. This seemed a little superfluous to me but I suppose they know what they're doing.

Blitzed code can be linked to m/c routines and Blitz claims to be compatible with BASIC extensions provided that the cartridge or software is present when the compiled program is run. I didn't get the opportunity to test this claim so can't comment on the claim – if you're intending to use it in this context you'd probably ask for a trial run anyway, wouldn't you?

Whoever wrote the manual was decent enough to point out that Blitz will not work with dynamically dimensioned arrays (eg DIM A(200) is acceptable but X=200: DIM A(X) is not). This is claimed to be a common shortcoming of most compilers, so shouldn't be considered a fault.

"A worthwhile investment"

At £50 for a disk and 8-page A5 manual, Blitz is not cheap. If you regularly use a long BASIC program it may be a worthwhile investment. The manual makes no reference to the commercial use of software compiled by Blitz so check before buying it if that is your intention.

CONTACT: Supersoft, Winchester House, Canning Road, Wealdstone, Harrow HA3 7SJ. Tel: 01-861 1166.

Don't Make It Your Loss

Electromagnetic charges and power surges or failures can corrupt or erase computer records. Replacement of data is time-consuming, not to mention costly. Viola Gienger discovers an insurance policy specifically covering data.

British businesses could be losing from £1 million to £5 million each year because of computerised data that is lost or currupted, and a London insurance company has come up with a policy specifically to protect against such losses.

Wigglesworth Ltd, an insuror for 25 years in business and high-technology fields, developed the policy to cover costs of restoring data to a computer system as well as profits lost as a result of the damage. It is the first policy of its kind, specifically covering computer data, not just the equipment.

A prominent computer security consultant, Ken Wong of BIS Applied Systems in Manchester, says about 10 per cent , or 100,000, of the one million computers sold in the UK each year are for business purposes and the value of data stored on each one could range from £10,000 to £50,000. Among the valuable computerised files could be crucial letters, production records and business accounts.

But Wong's £1-5 million estimate of overall loss per year may be low. In just two of the hundreds of such cases he has handled, one business lost £3 million and another £4 million as a result of computer failure of one kind or another.

While many business insurance policies cover damage to office equipment which includes computers, only a few consider the costs to a company if information stored on that equipment is lost or distorted either accidentally or maliciously. The most frequent causes of losing valuable data range from basic computer failure to a simple flicker in the electricity flowing to a terminal.

"Enormous risks are faced"

"British companies are facing enormous risks associated with their vital computer data ranging from disgruntled workers to careless staff, mysterious electromagnetic influences, power surges, hackers, logic bombs, so on and so forth," Wigglesworth director Andrew Paddick said. "The costs of reinstating data often run into many thousands or even hundreds of thousands of pounds, far in excess of the actual value of the hardware equipment itself."

Wong said many firms are computerising as rapidly as possible without realising how vulnerable their computer records are.

"For the person in particular who is using a personal computer or a mini-computer, you will find in general that he has not obtained any computer insurance to cover against the risk of loss of computer data," Wong said. "Well, you may be spending £4,000 to buy a personal computer, but to reconstitute all the data that was lost could mean a much, much higher cost to the organization."

In addition to the obvious hazards of fire, flood and theft that can destroy records kept on paper, computer files are subject to electromagnetic charges and power surges or failures that could corrupt or erase data stored on a disk or in a computer.

In one example Wong cited, the Royal Shakespeare Company's office in Stratford-upon-Avon had problems because of interference from transmissions by a radio station. As a result, the memory on electronic typewriters was completely wiped clean of any data.

"Back-ups just as vulnerable"

The most common way of protecting against a total loss of computerised files is to make back-up copies, but depending on where and how those are stored they may be as vulnerable as the original working files. "We must expect all prudent business computer users to back up their data and take all reasonable precautions," Paddick said. "But these acts themselves do not, by any means, totally eliminate the risks concerned."

It is difficult to place specific figures on the total profits lost to loss of computer data, Wong said, because many firms are reluctant to disclose the details of such a loss fearing public embarrassment. In the case of computer records being distorted or destroyed maliciously, companies often fear news of such "hacking" will encourage more of the same.

The drastic costs incurred by such losses can include temporary but often long hold ups in doing business, lack of crucial information and delays in invoicing customers that could lead to serious cashflow problems.

Even if stored data is not lost altogether, distorted records could cause managers to make bad decisions based on faulty information. Also, the time involved in finding the cause of the problem and restoring lost data could mean staff overtime and charges from specialists who work on the system, all costing the business a considerable loss of the original investment.

And finally, if a company stores personnel data on computers and that information is corrupted the firm may be in breach of the 1984 Data Protection Act, which controls the use and distribution of personal information. The Act requires all computer users who keep personal information that can be traced to the subject to register with the newly-established Data Protection Registrar.

"Inadequate security considerations"

"If there have been any reasonable grounds to prove that the management has given inadequate security considerations to protect or safeguard the unauthorized disclosure of that information, unauthorized access to that information or even the loss of that information, then the company as well as the directors could be individually liable for fines or even for damages," Wong said.

The Wigglesworth policy is underwritten by Stronghold Insurance Co Ltd, a subsidiary of Norwich Winterhur Group, with a premium of 0.75 per cent of the total insured amount. Paddick says acceptance into the policy depends on "good housekeeping" among other things, Regular maintenance and a safe environment are always considered in setting the premium or simply accepting a customer in the first place. The coverage can also be extended for standard fire and perils insurance at an extra cost.

CLASSIFIED

UTILITY 7

CBM 64,128 £4.99

Seven excellent programming utilities – Character Editor, Screen Editor, Sprite Editor, List Freeze, Hex/Dec Converter, M.C. to Data Statements, Joystick Control Program.

SPRINTER

CBM 64,128 £2,49

A fun betting program ideal for paties nd celebrations. Prices inc. P&P. Special offer BETPRO, UTILITY 7, and SPRINTER £14.99p. Send remmitance to Davesoft, 24 Bankfield Lane, Norden, Rochdale, Lancashire, OL11 5RJ.

BETPRO

CBM 64,128 £9.99

The ultimate horse racing utility – gives over 60% Winners (if used as per instructions), producing excellent level stake profits. Works for both Flat and Jump racing. Written by a very successful and clever professional gambler. Price inc. P&P. Send remmitance to Davesoft, 24 Bankfield Lane, Norden, Rochdale, Lancashire, OL11 5RJ.

IF YOU CAN MEET
THE MIND CHALLENGE OF

Hit & Miss

DEMAND YOUR COPY NOW!

COMPLETE WITH *FREE* POSTER

BEFORE ITS TOO LATE!

Commodore C16/Plus 4

VENTUREGATE · LTD

1541 Head Alignment Service

Does your 1541 suffer from:–
Read/Write Problems. The Bumps?
Tel: 051 423 5493 For More Info.

GADGET 64 £5.95

This 100% machine code CBM64 cassette utility offers: Append, Delete, Renumber (including Goto, Gosub, etc.) Satisfyingly simple to use. Send your Name, Address & P/O or Cheque for £5.95 (P&P Free) to:

J&J GILMOUR LTD,
Dept CI985, 4 Copse Close, Liss,
Hampshire, GU33 7EW, England.
Tel: 0730-893430.

MOONRAKER £6.95

CBM64 Space Game features fast –
● Fly-Into Rolling Radar Display
● Infra-Red Target Screen, Altitude, Time, Score Indicators, Fuel/Purchase Option, Promotion! Send your Name, Address & P/O or Cheque for £6.95 (P&P Free) to:

J&J GILMOUR LTD,
Dept CI985, 4 Copse Close, Liss,
Hampshire, GU33 7EW, England.
Tel: 0730-893430.

PROFESSIONAL
COMMODORE REPAIRS

The complete Commodore Service Centre

We have all the spares in stock to give you a FAST and RELIABLE SERVICE

Commodore 64	from £14.00
Vic 20	from £10.00
C2N	from £ 8.00
Modulators	from £ 8.00
1540/41	from £18.00

★ Full telephone diagnostic and estimate service available
★ Six months warranty on all repairs
★ Above prices inclusive of labour and return of postage. Parts extra.

RING 0234 213645 NOW!

Send faulty items with description to:–

ZEDEM COMPUTERS LTD
2 Kimbolton Road, Bedford, MK40 2NR
(Trade and overseas inquiries welcome)

HERE'S MY CLASSIFIED AD

Please continue on a separate sheet of paper for trade advertisements.

I make this __________ words, at __________ per word so I enclose £ __________

Name __________

Address __________

__________ **Telephone** __________

Send your classified entries to:
Classified Department,
Commodore Computing International Magazine,
40 Bowling Green Lane,
London EC1R
Tel: 01-278 0333

Private readers — Free (max. 32 words)
Trade advertisements — cost 40p a word
Semi-display — why not make your advertisements more substantial by choosing the semi-display rate. It is only £8 a single column centimetre.
Please ensure that **all** classified advertisements are prepaid.

CLASSIFIED

CBM 64 & datasette, joystick IEEE and RS232 interface. Games including Elite, Blue Max, Bruce Lee, Solo Flight and 20 others. Also 64 carry case. £300 will separate. Tel: Stroud 5506 (after 4pm).

CBM modem, unused + free years subs to Compunet £70. Easyscript unused brand new £25, 1520 plotter v.g.c, £45. Seikosha AP80A dot-matrix printer & all leads, software, paper £80. 01-989 6460 after 6pm (Gary).

Vic 20 starter pack; speech synthesiser; two cartridge adventures; games tapes; Hi-res, extended basic and RAM cartridges; Quickshot II joystick, two books. Offers please. (£65-£70) or swap CB equipment. Will split. All v.g.c (061)-928 4820.

Will swap five original games inc. Gogo Ghost etc. for decent adventure. Contact Matthew. Tel (0296) 81571. Address 142 Ingram Ave., Aylesbury, Bucks HP21 7PJ. I will do a part exchange.

Swap 48K Spectrum and printer with software including compiler for 1541 disk drive and disks or sell for £150. Tel: 0592 742815 after 6pm.

Swap "View To A Kill" for "Quill". Must be complete and in excellent condition, free game of choice if you complete swap, Sean O'Kane 72 Hampstead Park, Gulmore Road, Derry, N. Ireland BT48 7RY.

CBM SX64 for sale, only 3 months old. CBM 64 compatible. Also lots of original software. Bargain at £450. Phone 01-555 3141 and ask for David Crichton.

Vic 20 16K RAM pack, light pen and over 30 top games only £100. Please contact Paul Megram, Thatched Cottage, Nup End Lane, Wingrave, Aylesbury Bucks. Tel: Aylesbury 681464 after 6pm.

Cartridges for sale: Simons Basic £20, Arrow (turbo tape) £15, Lazarian, Jupiter Landing, Omega Race, Radar Rat Race, Music Composer £3 each. Tel: (0283) 67234 after 6pm.

Need doc's and games on disk. Will trade US games and doc's. C. Ahrend, 7310 Ashley Avenue, Colton, CA 92324 USA.

For sale CBM64, disk drive, MPS801 printer, plus Currah speech and over £2000 of original software plus C2N cassette player worth over £2700. Sell for £700 o.n.o. Phone 977 0352 now.

Swap Elite for Gyruss or Star Wars by Parker Bros. Andy Staff, 62 Pert Close, Muswell Hill, London N10 2RZ.

Wanted C-16 owner for penpal to swap ideas, tips & views. Write to Gary Rann, 178 Jeremys Green, Edmonton, London N18 2NE or phone 01-803 9802.

COMMODORE REPAIRS
BY COMMODORE APPROVED ENGINEERS
VIC 20 modulators £6.50, VIC 20 from £14.50, CBM 64 from £18.00, C2N from £7.00, Printers, Disk unit etc., for more details, write or telephone
G. C. BUNCE AND SON
36 BURLINGTON ROAD,
BURNHAM, BUCKS SL1 7BQ
Telephone: (06286) 61696

Vic 20 for sale, 16K-3K switchable RAM pack. Super expander and Adventureland cartridges. Programmers reference manual. Several books. Approx 20 original games £80 o.n.o. Tel: 0835 22287 after 6pm.

Games for 64 for sale, many titles including Raid Over Moscow, Fighter Pilot etc. Write for list to Chris, 3 Redland Road, Oakham, Leics LE15 6PM (Also many punk records for sale).

CBM64 reset switch, software, lightpen, copyboard and Adventure of Dark Castle, new, worth £50 snip at £20 including postage. Stephen White, 13 Delamere Close, Peterborough, Cambs PE1 4RX. Tel: 0733 68674.

For sale 48K Spectrum cassette recorder, 200 games, joystick and interface, speech synth and still under guarantee £110 the lot. Tel: 01-692 2957 ask for Ben. Ring after 5pm.

Wanted original software! Must be as new with manual and/or other extras. Will respond only to wanted software. Send description and price to Jon Glittenberg, Kunigundberg, str. 22, Perchtoldsdorf 2380, Austria.

Easyscript – £45, Future Finance £40, £75 for both. Retail price £75 each. Tel: Evenings 08045 7455.

C-16 computer penpal wanted, aged 13 to 14. Apply on tape only to M Gilbert, 6 Whyalla Close, Grainthorpe, Louth, Lincolnshire LN11 7JQ – Thank You. Enclose your name and address.

Second hand R.A.T. joystick required for dissection and analysis, must be in full working order. Contact C. Morrison, 111 Shakespeare Street, Glasgow G20 8LE. Will pay between £5 and £10 plus p&p.

Wanted 1540 or 1541 disk drive for Vic 20 in Leics or Rutland area. Tel: Uppingham 823497.

Commodore modem with free membership of Compunet, both unused. Cost over £90 will accept £50. Phone Dover (0304) 212978.

For sale, £250 + of Commodore 64 software including Elite, Frankie, Entombed, Simons Basic etc. Best offer secures. Phone Richard 051 733 0090.

CBM64, boxed, with reference guide. Quick sale needed. £85 o.n.o. Phone John on 061-723 3674 or write to 6, Dale Street, Radcliffe, Greater Manchester M26.

Commodore modem used once, £50. Phone Canvey (0268) 698608.

For sale CBM64 + disk drive + MPS801 + speech synthesisor + over £1300 of software + over £200 of disks and books. Sell the lot £800. Phone Paul 977 0352.

Commodore SX64 portable, includes colour display and disk drive, complete with joystick, White Lightning, Hobbit, Super Huey, Basic Compiler, Easy Script etc. £350. Phone Crowthorne (0344) 761341 after 7pm or weekends.

Commodore 64 and datasette C2N with dust covers. Joystick plus £180 worth software, manuals, books etc. All boxed in as new condition for £230 o.n.o. Phone Alan 0727 72871 (Park St., St. Albans).

For sale 48K Spectrum with DK Tronics keyboard, cassette unit, 60 original games 100+ PCN and 15 Spectrum mags. Worth over £700, will sell or swap for 1541. Phone Tim 021-458 3095.

For sale 1541 £170 o.n.o. GP100VC plus paper £160 o.n.o. £300 for both. Both boxed and in excellent condition. Will deliver South Wales area. Telephone Clive on (0222) 862168.

Easyscript & Easycalc for sale for CBM64 both unused still in boxes. Will accept £35 each o.n.o. Also music composer, Tony Harts Art Master, Simons Basic, offers invited. Phone 0709 584570.

IEEE to Centronics parallel printer interface (small systems engineering) v.g.c. £50. Phone Jerry on 01-508 1408.

Commodore 4040 twin disk in mint condition, complete with IEEE cable £375. Interpod IEEE converter for Vic/64, plus RS232 port £35. Tel: 0258 55420 after 5pm or weekends.

Wanted CBM printer, will swap for over £300 of software over 300 titles originals top games available. Printer must be in good condition, also wanted program to calculate cricket averages, batting, bowling. Tel: (Slough) 75802.

English 64 user, 17, wants penfriend in Europe/Scandinavia to exchange ideas, tips etc. Write to Richard Chadd, 15 Ocean View Road, Bude, Cornwall EX23 8NN England.

CLASSIFIED

I am looking for a club for C64: Please write to Trimarch Giuseppe, No 3 Catullo Street, 34100 Trieste, Italy.

Wanted Quill for CBM64 (on cassette). Buy or swap. Write first – The Hill, Cornaslieve, Virginia, Co Cavan, Ireland. Swaps include Bruce Lee, Moscow, Hobbit, Kickstart, Decathlon, Pitstop (both).

CBM64 modem plus 11 months subscription to Compunet. Best offer around £75 secures. Write – The Hill, Cornaslieve, Virginia, Co Cavan, Ireland or Phone (049) 47212 and ask for Fintan. Price includes postage.

Wanted, any Vic 20 games for 16K or unexpanded. Phone Swindon 693412 or write to 28 Smiton Brook, Coringham, Swindon, Wilts, SN3 5BX.

Wanted: Quill or Dungeon Builder for the 64. Must be in excellent condition with all manuals. Will offer View To A Kill (new), 72 Hampstead Park, Culmore Road, Derby, N. Ireland BT48 7RY.

C64 and 1541 disk drive, very good condition, boxed £245. MPS801 new £125. Easyscript new, unused £25. Simons Basic cartridge £20. 'Fassem' assembler tape new £9. Medford (061) 941 3102.

PAL 64 and Infomast £15 each or swap any software considered. Phone 0742 347551.

Wanted: Plotter/printer for use with 64/1541. Any printer considered. Have large collection of original games to trade or will swap for whatever you want for good printer. Please write to Arthur. PO Box 48, Derby DE6 6QP.

Vic 1515 printer with spare ribbon and paper, working order, manual, cables £50. Tel: Hemel Hempstead (0442) 42493.

CBM64, 1541 disk drive, 1525 printer, Simons Basic, Easyscript + some software including Impossible Mission, Nato Commander, for £500 o.n.o. will consider splitting. Phone Stephen on 01-907 9734 Sunday to Thursday.

Software for CBM64 wanted to buy or exchange. Also second hand disk drive needed. Contact Darren on Reading (0734) 882367 after 6pm except Sat. and Sun.

CBM64 8032 I would like programs on tape for this machine. A disk out of reach at moment – no tapes available in Australia. Please help. Mike Taylor 4/108 Longfield St. Cabramatta 2165 N.S.W. Tel: 02-724 4209.

CBM 1541 disk drive. MPS801 printer £130 each. Prism 1000 modem and OEL comms pack £55. Easyscript, Future Finance, Easyfile, Dairy 64 Rom £60. The lot all under 4 months old. 0734 509839.

Commodore MPS801 printer, brand new, still in box, only £145 including Securicor delivery. Tel: York 22890 (24 hour answering machine).

1520 printer software, titles inc. cassette labeler, typewriter, biorhythm, word 1520, sketch perfect – uses joystick. £3.50 each or compendium £8.00 incl p&p. Send: C. Griffiths, 62 Pentre St., Glynneath, Glamorgan SA11 5HA: Return of post.

PET 24K RAM board, suit any PET (even 32K) £35. 8K PET with basic 2-0, C2N cassette, loads of software, soundbox, £60. Separate or together £85. Delivery possible. Tel: (0202) 422028 Bournemouth.

Exchange CBM (PET-ROM 4) for CBM64 with or without the C2N cassette – Tel: Wolverhampton (092) 734849 anytime.

CBM16 owner sale + £150 software, one joystick and instruction leaflet etc. Sell for £110 or nearest offer. Phone (021) 526 5946 and ask for Robert.

1541 disk drive plus Easyscript plus 5 games £140 o.n.o. Tel: (0533) 770323 or write to I Batey, 8 Fairisle Way, Countesthorpe, Leics LE8 3WX.

Wanted to suit CBM64 printer and monitor mono or colour. Phone 0926 24350 mornings only or write to Mr Deakin, 13A Radford Road, Leamington Spa CV31 1NF.

1541 disk drive and Esyscript and 20+ double sided disks, wanted £200 o.n.o. Richard 051-733 0090.

CBM64, C2N, joystick, Simons Basic, 4 books, £160. £400 software £190 (will sell seperately). New Viewdata modem £65. Sell the lot £380. Ring 07373 60965 anytime. Now!

For sale Easyfile disk £35 – or swap Future Finance. 0582 595467 evenings or weekends.

For sale CBM64, C2N, joysticks, Simons Basic, mags, books, 120 + software titles including Exploding Fist, Pitstop II, Entombed, International Basketball etc. Will sell for £400 cost £550. Phone (0450) 75939. Ask for Allan after 4pm.

Commodore 64, 1541 disk drive, 1701 colour monitor, 2 joysticks, cartridges, White Lightning, EasyScript, BBC emulator, Spectrum emulator and over 100 disks of software. Only £495 (05827) 69152.

Vic 20, C2N, 16K switchable Rampack, joystick, Into to Basic part 1. Software worth over £100 including Jetpac, Snooker, Mastermind, Computer War, Tomb of Drewan. The lot £95. Tel: Epsom 21811.

CBM64 – new machine! £120 o.n.o. Tel: John Rochdale (0706) 524228.

Superbase 64, as new, two disks and manual £55 for quick sale. Other books and software. Send/phone for list: Derek Grasby, 43 Scott Park Road, Burnley, Lancs (0282) 24946.

For sale! Commodore Vic 20 computer, Commodore cassette recorder, Introduction to Basic – part 1, five programs, book of programs £100. Sandy Bulloch, 62 Millburn Gardens, Largs, Ayrshire, Scotland.

Wanted Vic 20 RAM expansion cartridge. Please write giving details and price to 28 The Meadow, Copthorne, Sussex RH10 3RG.

1541 disk drive £100. Ring Frank on 01-777 5522.

1520 Printer Plotter £45 inc. P&P. Also extra pens and paper. Send cheque to Paul Brady, 29 Wykeham St., Scarborough, N. Yorkshire YO12 7SA.

CBM SX-64 for sale with leads manual and original software for sale. Will arrange carriage £350. John Kendall, 118 Kent Street, Barrow in Furness, Cumbria.

CBM 64 software for sale. Vizawrite (Disk) £50, Superbase (Disk) £60. John Kendall, 118 Kent Street, Barrow in Furness, Cumbria.

CBM 64. Writer of two well received quilled adventures seeks the backing of a professional software house. Maps, game and some reliable comments supplied on request. Simon Sleightholm, 3 Chapel Lands, Alnwick.

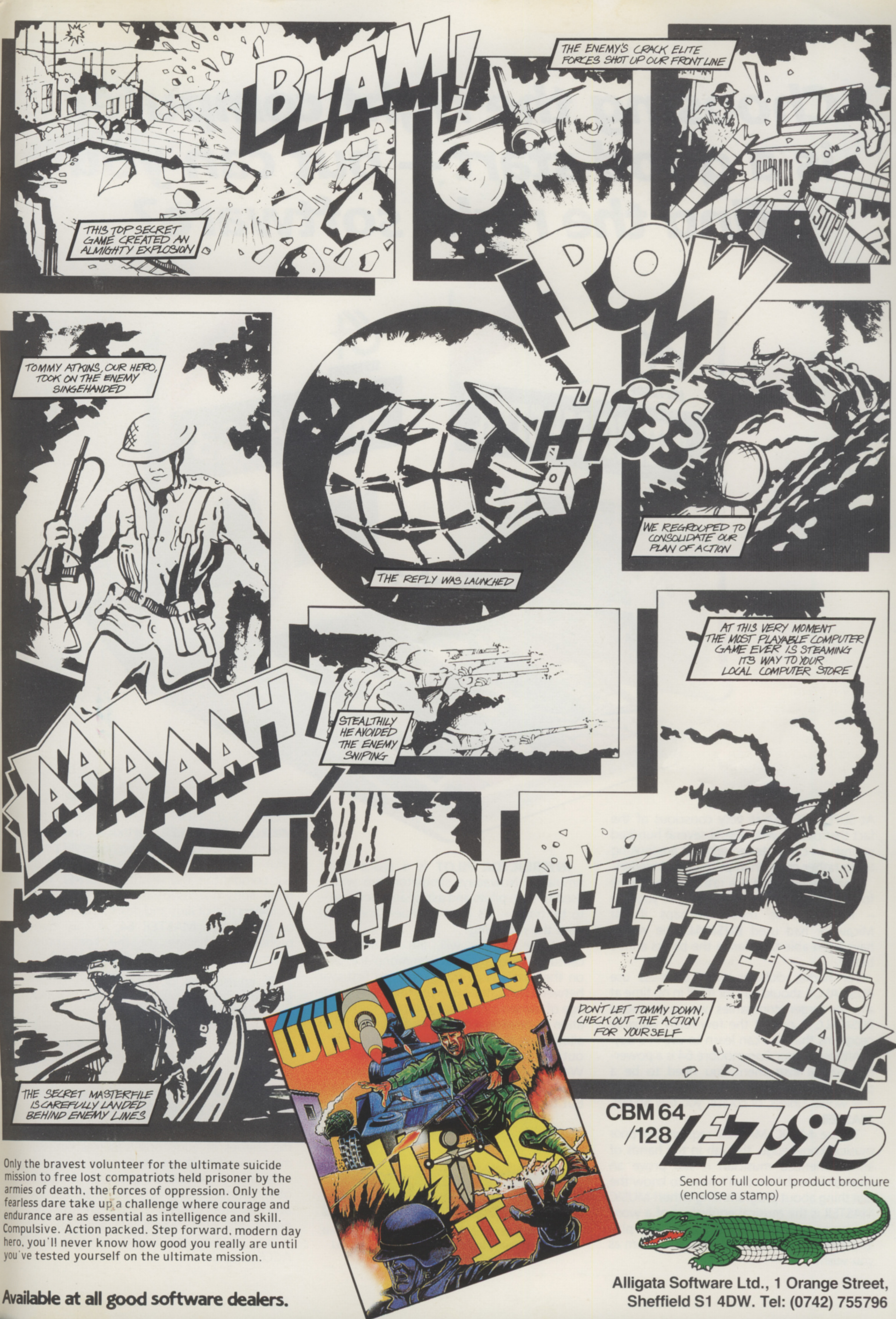
5¼ Disks for sale. Unused, single sided, double density, £1.10 each, £8.50 for ten. Also selection of Eproms: 27128's £3.00; 2764's £2.50. Phone Robert on 0604-402750 after 9pm every day.

CBM 64, C2N cassette and Alphacom 42 printer. Lots of software. Genuine reason for sale. £150.00. Phone Northampton (0604) 414960.

Wanted CBM 8032 or 8096 with 8050 Disc Drive. Please telephone 01-597 2167.

CBM 4032 cassette, twin disk drive plus PET/CBM Personal Computer Guide and CBM User Manual. Word processor, toolkit, games and utility software. Excellent condition £350 ono. Knowle (05645) 5162.

For Sale. Easyscript and games disk. Still boxed. Reasonable offers. Telephone Barbara 0359 70095.


BLAM!
THIS TOP SECRET GAME CREATED AN ALMIGHTY EXPLOSION
THE ENEMY'S CRACK ELITE FORCES SHOT UP OUR FRONT LINE
STOP
POW
TOMMY ATKINS, OUR HERO, TOOK ON THE ENEMY SINGEHANDED
HISS
THE REPLY WAS LAUNCHED
WE REGROUPED TO CONSOLIDATE OUR PLAN OF ACTION
AT THIS VERY MOMENT THE MOST PLAYABLE COMPUTER GAME EVER IS STEAMING ITS WAY TO YOUR LOCAL COMPUTER STORE
AAAAAH
STEALTHILY HE AVOIDED THE ENEMY SNIPING
ACTION ALL THE WAY
DON'T LET TOMMY DOWN, CHECK OUT THE ACTION FOR YOURSELF
THE SECRET MASTERFILE IS CAREFULLY LANDED BEHIND ENEMY LINES
WHO DARES WINS II

CBM 64 /128 £7·95

Only the bravest volunteer for the ultimate suicide mission to free lost compatriots held prisoner by the armies of death, the forces of oppression. Only the fearless dare take up a challenge where courage and endurance are as essential as intelligence and skill. Compulsive. Action packed. Step forward, modern day hero, you'll never know how good you really are until you've tested yourself on the ultimate mission.

Available at all good software dealers.

Send for full colour product brochure (enclose a stamp)

Alligata Software Ltd., 1 Orange Street,
Sheffield S1 4DW. Tel: (0742) 755796

Choosing the right computer is a good start — but can you find the right software?

64
SUPERSOFT
FOR THE COMMODORE 64
MUSIC MASTER
64
SUPERSOFT
FOR THE COMMODORE 64
BUSICALC 3
64
SUPERSOFT
FOR THE COMMODORE 64
INTERDICTOR PILOT

At SUPERSOFT we're very conscious of the fact that people who spend several hundred pounds on computer equipment are looking to do rather more than play Space Invaders.

Financial planning is a rather grand name for something you've been doing all your life – making ends meet! Perhaps if Mr Micawber had used **BUSICALC** he would have been able to balance the books a little better.

For home, club or small business use BUSICALC 1 should pay for itself in no time at all; for larger companies we recommend BUSICALC 3, one of the few really valuable programs that you can learn to use in a day.

Although your Commodore 64 is a powerful musical instrument you need to be a pretty good programmer to understand how it all works. Unless, of course, you buy **MUSIC MASTER!**

To use MUSIC MASTER requires no prior musical knowledge, though in the hands of an experienced musician it will prove an invaluable tool. You don't need to know the first thing about programming either! MUSIC MASTER is the musical equivalent of a word processor, remembering the notes you play and allowing you to replay and edit them as you wish.

INTERDICTOR PILOT is a space flight simulator. Nowadays simulators are widely used to train pilots and astronauts because – to be frank – it's a lot cheaper (and safer) than the real thing!

Imagine, if you will, life in the 22nd century: space travel is commonplace, and on the outskirts of the galaxy the first war between civilizations is being fought. A shortage of trained pilots has prompted the Federation to develop a computer simulation that allows raw recruits to gain experience without paying for their mistakes with their lives. With the aid of your Commodore 64 you too can learn to pilot the Interdictor Mk 3 craft. But be warned – this is no game!

SUPERSOFT

SUPERSOFT, Winchester House, Canning Road,
Wealdstone, Harrow, Middlesex HA3 7SJ
Telephone: 01-861 1166

Other SUPERSOFT products include the **MIKRO ASSEMBLER** cartridge, the only assembler that's ideal for beginners yet powerful enough for the professional (most of our competitors use it!). The **VICTREE** cartridge adds dozens of commands to Basic including toolkit aids and disk commands; or on disk there's **MASTER 64,** a really comprehensive package for the keen programmer.

Of course, we do also publish games programs, and with classics like **STIX, QUINX** and **KAMI-KAZE** in our range we are one of the market leaders. But we most enjoy coming up with the sort of programs that are going to be in use for months and years, not hours and days – the sort of programs that make you glad that you bought a computer – and glad that you bought SUPERSOFT!

You won't find SUPERSOFT products on the shelves of your local supermarket. But most specialist shops stock titles from our extensive range (and are prepared to obtain other programs to order). However you can also buy direct by sending a cheque (pre-paid orders are post free!), by calling at our offices, or over the telephone using your ACCESS card.